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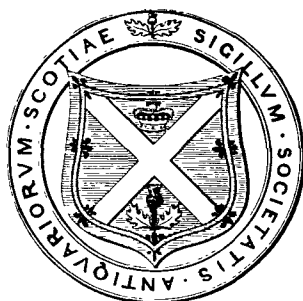
OF THE

Society of Antiquaries of Scotland



PROCEEDINGS
OF THE
Society of Antiquaries of Scotland

SESSION
MCMXXXVII.—MCMXXXVIII.



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MCMXXXVIII.

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TABLE OF CONTENTS

	PAGE
Anniversary Meeting,	1
The Vitrified Fort at Rahoy, Morvern, Argyll. By Professor V. G. CHILDE, D.Litt., D.Sc., F.S.A.Scot., and WALLACE THORNEYCROFT, F.S.A.Scot...	23
The Experimental Production of the Phenomena Distinctive of Vitrified Forts. By Professor V. G. CHILDE, D.Litt., D.Sc., F.S.A.Scot., and WALLACE THORNEYCROFT, F.S.A.Scot.,	44
The Abbey of Aberbrothock: Two Early Thirteenth-Century Seals. By J. D. GILRUTH, M.D., F.S.A.Scot.. . . .	56
Ancient Portable Money-Box or "Offerand Stok." By CHARLES TAYLOR, F.S.A.Scot.,	68
Doune Castle. By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot.,	73
The Armorial De Berry. (Scottish Section.) By J. STORER CLOUSTON, O.B.E., F.S.A.Scot.,	84
Suggestions for the Dates of Four Scottish Monuments. By Miss MARY E. BOYLE, F.S.A.Scot.,	115
Notes on Scottish Coins: (1) Rex Scottorum Pennies of David II.; (2) Edinburgh Light Groats of Robert III.; (3) Some James II. Groats of the Third Variety of the Fleur-de-lis Groats; and (4) Gilbert Kirkwood's Mark on a Gold Coin of James V. By C. H. DAKERS, M.C., F.S.A.Scot.,	122
Excavation on a Viking Settlement at Freswick. By ALEXANDER O. CURLE, C.V.O., LL.D. Preliminary Report read. (See next volume.)	
A Bronze Bowl from the Rhinns of Galloway. By Rev. R. S. G. ANDERSON, B.D., F.S.A.Scot.,	137
Cup- and Ring-Markings on Craig Ruenshin, with some Comparative Notes. By ALISON YOUNG, F.S.A.Scot.,	143
Scottish Late Bronze Age Axes and Swords. By WILLIAM HENDERSON, M.A., F.S.A.Scot.,	150
Scottish Gravers of Flint and Other Stones. By A. D. LACAILLE, F.S.A.Scot.,	180
Excavations of Three Neolithic Chambered Cairns—One with an Upper and a Lower Chamber—in the Islands of Eday and the Calf of Eday in Orkney. By CHARLES S. T. CALDER, A.R.I.A.S., F.S.A.Scot.,	193
Report on the Pottery. By A. J. H. EDWARDS, F.S.A.Scot.,	213
Three Fragments of a Sculptured Cross of Anglian Type now preserved in Abercorn Church, West Lothian. By CHARLES S. T. CALDER, A.R.I.A.S., F.S.A.Scot.,	217

TABLE OF CONTENTS.

	PAGE
The Edinburgh Touchplates: Some New Light on Their Origin and Purpose. By Lt.-Col. J. S. BISSET, F.S.A.Scot., F.G.S.Edin.,	224
Resolution to record the Loss to Scottish Archæology through the Death of Dr JOHN GRAHAM CALLANDER,	232
Excavation of Two Bronze Age Burial Sites in Ayrshire. By ALEXANDER G. MCLEOD, M.A., F.S.A.Scot.,	235
Tolquhon Castle and its Builder. By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot.,	248
Excavations at Birens, 1936-1937. By ERIC BIRLEY, M.A., F.S.A.Scot., F.S.A., with Contributions by I. A. RICHMOND, M.A., F.S.A.Scot., F.S.A., J. A. STANFIELD, and W. PERCY HEDLEY, F.S.A.,	275
Excavations carried out by H.M. Office of Works in the Bronze Age Levels at Jarlshof in 1937. By Professor V. GORDON CHILDE, D.Litt., D.Sc., F.S.A.Scot.,	348
A Bronze-Gilt Harness Mounting from Jarlshof. By A. J. H. EDWARDS, F.S.A.Scot., Director of the Museum,	363
Glass Armlets in Britain. By H. E. KILBRIDE-JONES (read April 11, 1938),	366
Index.	396

LIST OF ILLUSTRATIONS

	PAGE		PAGE
Stone Object from Rinyo, Rousay,	10	The Charter of two bovates of land in the	
Fragment of Cross-shaft from Cambus-		territory of Rossie (1211-1214),	65
nethan, Lanarkshire,	13	Old Money-Box or "Offerand Stok,"	68
Roman Altar from Newstead,	14	Doune Castle: Plans. Plate III., <i>facing page</i>	73
Cinerary Urn from Craigentenny,	20	— View from north-east before Restora-	
Bone Pendant and Worked Flints found in		tion. (<i>From photo in the Macbean Jacobite</i>	
the Urn,	21	<i>Collection, Aberdeen University Library</i>), . .	74
Fragments of a Beaker from Craigentenny, .	21	— Bird's-eye View from south-east,	
Vitrified Fort at Rahoy—Plan. Plate I.,		restored. (Drawn by Thomas Ross,	
<i>facing page</i>	24	LL.D.),	75
— — — Segment of Outer Face,	25	* Château de Pierrefonds: Plan, after	
— — — Cast of Log in vitrified Mass,	28	Viollet le Duc,	78
— — — Central Pavement and Hearth,	29	* — View from south-east. (Drawn by	
— — — Sections. Plate II., <i>facing page</i>	31	David Macgibbon, LL.D.),	79
— — — Inner Face in north-west Quadrant		The Armorial de Berry (Scottish Section),	
and Culvert,	31	Plates IV.-XIV. (Coloured), <i>facing page</i>	114
— — — Paving over "Cellar,"	33	Carved Stone at Fowlis Wester.,	115
— — — "Cellar" after removing Pave-		Cross-slab in the Church of St Vigean's, near	
ment,	33	Arbroath,	117
— — — Inner face in south-east Quadrant,	35	Carved Stone at Invergowrie,	119
— — — Inner face in north-east Quadrant,	36	Tombstone in the Churchyard of Benvie, . .	120
Socketed Iron Axe from Rahoy,	39	Pennies (Sterlings) of David II.,	123
Bronze Fibula, from Rahoy,	40	Carved Stone from Orkney, believed to have	
Cross-section of Axe, slightly enlarged, . .	41	been a Stand for holding Culverin Balls, . .	131
Sections of Axe,	42	Silver Ornaments from Skail,	131
Experimental Production of Vitrification—		Cinerary Urn from Monteviot, Roxburgh-	
Plan: The Model Wall; Plan and		shire,	133
Sections,	47	Food-vessel from Dobbie's Knowe, Bonny-	
— — — — — completed and burning,	48	rigg,	135
— — — — — the Vitrified Core,	49	Bronze Bowl from Awhirk,	137
Artificially Vitrified Basalt, showing Drops, .	50	Carved Rock Surface at Craig Ruenshm, . .	143
— — — — — showing Casts of Timbers,	50	— — — at Craig Ruenshin,	144
Rahoy: Model Wall; Plan and Section	51	Cover-stone of Cist at Tillicoult,	145
— — — — — completed,	52	Food-vessel Urn from Tillicoult,	146
— — — — — after burning,	54	Standing-stone, Gladfield,	146
Impression of and the Seal of Prior Robert		Stone outside Circle at Monzie,	147
de Lambeley,	56	Stone in Passage of Earth-house, Pitcur, . .	148
The Charter of Kenny (1225-1236),	58	Socketed Bronze Axes,	154-158
The Confirmation of the Charter of Kenny		Bronze Swords and Sword Chape,	159
(1351), Cortachy Muniment Room,	60	Distribution Map of Socketed Bronze Axes	
Impression of the Seal of Prior W., the son		in Scotland. Plate XV., <i>facing page</i>	154
of Matheus,	62	Distribution Map of Leaf-shaped Swords in	
Statue of Thomas à Becket, Archbishop of		Scotland. Plate XVI., <i>facing page</i>	160
Canterbury, Abbot's House Museum,		Scottish Gravers,	185, 187
Arbroath,	63	Jaspilite Chisel-ended Tool from Whitrig-	
		hill, Mertoun,	189

	PAGE		PAGE
French Gravers, for comparison.	191	Joanni Damasceni Opera (Basel, 1536), with bookplate of Robert Reid, Abbot of Kinloss and Bishop of the Orkneys, and signature of William Forbes, second laird of Tolquhon.	254
Cairn, Huntersquoy: Plan and Sections.	194	Tolquhon Castle: view of North Front.	259
— — — Entrance to Lower Chamber.	196	* — — — about 1840.	259
Entrance to Cairn on Vinquoy Hill.	196	— — — view of Gatehouse.	260
Cairn, Huntersquoy: Plan and Sections of Lower Chamber.	199	* — — — view looking northwards along West Front.	261
— — — Interior of Upper Chamber.	201	* — — — view of East Front and South-East Tower.	262
— — — Plan of Upper Chamber.	202	— — — Tower in Courtyard.	263
Axe and Axe-like Implement (1 and 2) from Cairn, Huntersquoy, and Axe (3) from Cairn, Calf of Eday.	204	* — — — the Forecourt Gate.	265
Cairn near Sandyhill Smithy: Plan and Sections.	205	— — — view in pleasure, looking towards North-West Tower.	266
— — — Stall with Shelf in end Compartment.	207	— — — Heraldic Stone found among ruins of the "Auld Tower."	268
— — — Calf of Eday: Plan and Section.	209	— — — Plan of Basement.	269
— — — Map of Monuments.	210	— — — Plan of Main Floor.	271
— — — Entrance passage, looking into Chamber.	211	— — — General Plan, showing Lay-out of pleasure.	272
— — — Interior of Chamber, showing recesses at north corner.	212	Map showing Hadrian's Wall and its outliers.	278
Pottery fragments from Huntersquoy Cairn and from cairn near Sandyhill Smithy, Calf of Eday.	214	Birrens: Primary Structures.	281
Suggested reconstructions of vessels from cairn near Sandyhill Smithy.	215, 216	— Central block, original state.	282
Front and side views of fragments of Shaft and obverse and reverse of Boss of Cross-head of Anglian Type, now at Abercorn Church, West Lothian.	218	— West Gate, 1895 and 1936.	285
Front and side views of Cross restored.	219	— Site XIX W., Record-Plan and Period-Keys.	287
Reverse of Boss of Cross-head: Zoolomorphic and Interlaced panels; marginal moulding of Shaft; marginal moulding of Cross-head.	221	— Site XIX West: flagging and south wall of Levels IV, III, and II.	288-289
Touchplate of the Edinburgh Pewterers' Craft.	225	— Inner face of west end, showing remains of Level II wall covered by Level III threshold and two courses of Level IV walling.	289
"Johnny Faa's Charter Chest."	226	— Site VIII.	291
Stone Circle at Beech, Ayrshire.	235	— Conjectural first lay-out of Site VIII.	292
— — — Plan.	236	— 1936: Section of West Rampart.	294
— — — Cist A.	238	— 1937: Rampart of Antonine Fort.	296
— — — Ring-marked stone from Cist A.	239	— — Site XXII East: from the south, showing the walled-up doorway and demolished partition wall.	297
— — — Cremation Pit.	240	— — Site XXII East: secondary hearth and portion of a flat-rimmed platter.	298
Nith Lodge Stone Circle: Plan.	242	— — Site XXII West from the west.	299
— — — Incense-cup Urns from.	243, 245	— — Cut across the early ditch, eastern side of the <i>relentura</i> , from the north-west.	300
— — — Axe-hammer from.	244	— — Section of East Rampart.	303
— — — Cinerary Urn from.	246	— — Sections of North Rampart.	304
The Tolquhon Monument in Tarves Kirk-yard.	250	— — Late revetment at right angles to the north rampart at the eastern section.	306

LIST OF ILLUSTRATIONS.

ix

	PAGE		PAGE
Birrens, 1937: Site-plan, showing rampart-sections and course of aqueduct.	308	From Excavations in Bronze Age Levels at Jarlshof in 1937— <i>continued</i> :—	
Birrens: Decorated Samian from Birrens, and from London.	311	Plate XVII: Plan at level of Midden II.	<i>facing page</i> 348
— East Gaulish bowl.	314	Plate XVIII: Sections.	<i>facing page</i> 349
— Decorated Samian ware.	315	Pillar A. and Slabs lying over H1.	351
— Trier ware fragments: from Birrens, Corbridge, and Housesteads.	317	Cist in O II Level and mouth of Pit T below it.	353
— Stratified pieces from Site XIX.	321	Inner Faces of Walls in Layer O III, looking south-west.	354
— Stratified vessels from Site XIX.	323	Outer Face of Walls G and F from south.	355
— Rims from Site VIII, Level III.	324	Stone Artifacts.	357
— Deposit below the existing north rampart.	324	Bone Artifacts.	358
— Sealed deposit from Site XXII West.	325	Oval Implement of Bone from M III.	359
— Stratified pieces from various deposits.	326	Sub-rectangular Implement of Antler from M III.	359
— Pottery from various sites.	327	Rims of Pots and Steatite Vessel from M II.	360
— Mortaria.	329	Pot-sherds from M III.	361
— Stamped Mortaria.	331	Engraved Bone Plaque.	362
— Part of a large storage Jar.	333	Bronze-gilt Harness Mounting from Jarlshof.	363, 364
— Graffiti and potters' stamps on Samian ware.	334	Glass Armlets of Type 1.	368
— Part of a hemispherical glass Cup.	335	Glass Armlets of Type 1.	369
— Bronze objects: terret rings; check-piece for a bridle; indeterminate object, perhaps a weight.	336	Glass Armlets of Type 2.	373
— Bronze objects: stud for harness; handle from a small bronze jug; shoe for a wooden pole or shaft.	338	Glass Armlets of Type 3, A.	377
— Part of a small Altar, inscribed.	339	Glass Armlets of Types 3, A-B.	378
From Excavations in Bronze Age Levels at Jarlshof in 1937:—		Glass Armlets of Type 3, C.	383
General View of Constructions in Layer O II.	348	Glass Armlets of Types 3, C-E and J.	385
		Glass Armlets of Types 3, F-I.	387
		Glass Armlets of Type 3.	390

L A W S
AND
LIST OF FELLOWS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND

L A W S
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

INSTITUTED NOVEMBER 1780 AND INCORPORATED BY
ROYAL CHARTER 6TH MAY 1783.

(Revised and adopted November 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHÆOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.

2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.

3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two members of the Council. Admission shall be by ballot.

4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology, who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council and balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on the 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the list of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years.

One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other Office-Bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreement subsisting between the Society and the Government, the Board of Manufactures (now the Board of Trustees) shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

18. The Annual General Meeting of the Society shall take place on St Andrew's Day, the 30th of November, or on the following day if the 30th be a Sunday.

19. The Council shall have power to call Extraordinary General Meetings when they see cause.

20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

21. Unless special arrangements to the contrary have been made, copyright of *The Proceedings* and of all papers printed therein, as well as of all illustrations, shall belong to the Society. This provision shall not apply to illustrations made from blocks borrowed from outside sources.

22. Every proposal for altering the Laws must be made through the Council; and the Secretaries, on instructions from the Council, shall cause intimation thereof to be made to all the Fellows at least one month before the General Meeting at which it is to be determined on.

Form of Special Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

General Form of Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ sterling [*to be used for the general purposes of the Society*] [*or, to be used for the special purpose or object of*], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being.

LIST OF THE FELLOWS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND,

NOVEMBER 30, 1938

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HIS MAJESTY THE KING.

- | | |
|--|--|
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- 1901.*HAMILTON OF DALZELL, The Right Hon. LORD, K.T., C.V.O., Dalzell, Motherwell.
1935. HAMPSON, CHARLES P., Wentworth, Eccles. Lanes.
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- 1925.*HANNA, WILLIAM GEMMILL CHALMERS, O.B.E., C.A., 6 Lennox Street, Edinburgh, 4.
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- 1927.*HARRISON, EDWARD S., The Bield, Elgin.
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1925. ROGER, GEORGE GUTHRIE, M.A., B.Sc., 3 Myrtle Terrace, East Newport, Fife.
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1923. ROLLAND, MISS HELEN M., 6 Murrayfield Drive, Edinburgh, 12.
1934. ROSENBLUM, ISAAC, 20 Shandwick Place, Edinburgh, 2.

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1929. ROSS, JAMES, 10 Midmar Gardens, Edinburgh, 10.
1922. ROSS, Major JOHN, Euroa, Langbank.
1928. ROSS, JOHN D., LL.D., 9345 210th Street, Bellaire, N.Y., U.S.A.
1926. ROSS, Dr WINIFRED M., Auchendean, Dulnain Bridge, Inverness-shire.
1927. ROWATT, THOMAS, Director, Royal Scottish Museum, Spottiswoode, Colinton.
1915. RUSK, J. M., O.B.E., J.P., S.S.C., Clinton House, Whitehouse Loan, Edinburgh, 10.
1936. RUSSELL, ARTHUR W., M.A., W.S., 25 Hope Terrace, Edinburgh, 10.
- 1930.*RUSSELL, DAVID, LL.D., Rothes, Markinch, Fife.
1937. RUSSELL, JAMES ANDERSON, M.A., Ph.D., "Alderwood," Bearsden, Dunbartonshire.
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1923. St VIGEANS, The Hon. Lord, LL.D., 15 Grosvenor Crescent, Edinburgh. 12—*Vice-President*.
- 1925.*SALVESEN, IVER R. S., 6 Rothesay Terrace, Edinburgh, 3.
- 1930.*SALVESEN, THEODORE E., F.R.S.E., 37 Inverleith Place, Edinburgh, 4.
1934. SAMSON, DAVID THOMAS, D.L., Old Cullen, Cullen, Banffshire.
1930. SANDERSON, KENNETH, W.S., 5 Northumberland Street, Edinburgh, 3.
1930. SCARTH, HENRY W., East Bank, Bowden, St Boswells.
1936. SCHOLES, W., M.A., The Abbey, Fort Augustus.
- 1910.*SCOBIE, Major IAIN H. MACKAY, 1st Seaforth Highlanders, 1 Coates Place, Edinburgh, 3.
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1935. SCOTT, LAURENCE GRAY, Vingolf, Lerwick, Shetland.
- 1921.*SCOTT, R. L., 11 Newark Street, Greenock.
1936. SCOTT, W. DAWSON, County Road Surveyor, Kirkwall, Orkney.
1931. SCOTT, W. LINDSAY, D.S.C., B.A., 7 Lambolle Road, Hampstead, London, N.W. 3.
1915. SCRYNGEOUR, NORVAL, Fellow of the Institute of Journalists, Summerfield, Longforgan, by Dundee.
1937. SEMPLE, WALTER, M.A., LL.B., Neidpath, Whitecraigs, Renfrewshire.
1930. SERJEANTSON, R. J., Troughend, Brora, Sutherland.
1929. SETON-ANDERSON, JAMES, The Haven, Dalbeattie Road, Maxwelltown, Dumfries.
- 1913.*SHAND, J. HARVEY, W.S., 38 Northumberland Street, Edinburgh, 3.
- 1927.*SHARP, ANDREW M., 8 South Inverleith Avenue, Edinburgh, 4.
1917. SHAW, JULIUS ADOLPHUS, Mus.D. Trin. Coll. Dublin, L.Mus., T.C.L., Beech Field, 169 Withington Road, Whalley Range, Manchester, 16.
1918. SHAW, MACKENZIE S., W.S., 1 Thistle Court, Edinburgh, 2.
1932. SHAW, NEIL, General Secretary and Organiser, *An Comunn Gaidhealach*, Octavia Buildings, Kilmacolm.
1930. SHAW, R. CUNLIFFE, M.Sc., F.R.C.S.Eng., L.R.C.P. (London), 24 Ribblesdale Place, Preston, Lancashire.
1917. SHAW, WILLIAM B., F.R.Hist.Soc., Honorary Curator of the Collections of the Presbyterian Historical Society of England, London, 56 Sandy Lane, Stretford, Manchester.
1917. SHIELDS, COURTENAY JOHN, C.A., 17 Melville Street, Edinburgh, 3.
1937. SILVER, A. S., M.B., Ch.B. (Edin.), B.A. (Oxon), The Old Parsonage, Davidson's Mains, Edinburgh, 4.
- 1930.*SIMPSON, Miss MARGARET E. BARBOUR, M.A., Assistant Inspector of Ancient Monuments for Scotland, 13 Manor Place, Edinburgh, 3.
1926. SIMPSON, RICHARD J., Hermitage, Corstorphine, Edinburgh, 12.
1936. SIMPSON, VICTOR ALEXANDER, Structural Engineer, Duncraggan, Ferry Road West, Edinburgh, 5.
1919. SIMPSON, WILLIAM DOUGLAS, M.A., D.Litt., Librarian, Aberdeen University, The Chaplains' Court, Chanonry, Old Aberdeen.
1931. SIMPSON, W. N., 31 Broomley Drive, Giffnock, Renfrewshire.

1908. SINCLAIR, COLIN, M.A., Ph.D., F.R.I.B.A., St Margaret's, Ralston Avenue, Crookston, Glasgow, S.W. 2.
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1928. SLATER, JOHN MURRAY, Provost of Kirkwall, Vogablik, Kirkwall.
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1928. SMALLWOOD, ROBERT HENRY GOUGH, Banker, 5 Carlton Villas, Wrexham, N. Wales.
1922. SMEALL, THOMAS YOUNG, Solicitor, Castlewood, Jedburgh.
1933. SMITH, ALEXANDER, M.A., F.R.S.A., 34 Holly Avenue, Jesmond, Newcastle-upon-Tyne.
1930. SMITH, Miss ANNETTE, 11 Midmar Gardens, Edinburgh, 10.
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1934. SMITH, JOHN, B.Sc., Chief Conservator of Forests, Sudan Government, Birkhill, Coalburn, Lanarkshire.
1936. SMITH, JOHN FREDERICK (Chief Librarian, Liverpool Public Libraries), Tutnal, Gwydrin Road, Calderstones, Liverpool, 18.
1938. SMITH, W. S. KENNEDY, D.A., Ayr Academy, Ayr.
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1921. SOUTAR, CHARLES GEDDES, F.R.I.B.A., 15 South Tay Street, Dundee.
1935. SOUTER, GEORGE, Drynie, Dingwall.
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- 1910.*SPENCER, Colonel CHARLES LOUIS, C.B.E., D.S.O., 5 Great Western Terrace, Glasgow.
- 1910.*SPENCER, JOHN JAMES, 5 Great Western Terrace, Glasgow.
1920. STEPHEN, Rev. WILLIAM, B.D., D.D., Carn Dearg, 68 Gardiner Road, Edinburgh, 4.
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1929. TAYLOR, JAMES, 5604 De Longpre Avenue, Hollywood, California.
1930. TAYLOR, JOHN, Collegehill House, Roslin, Midlothian.
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- 1926.*THOMPSON, Professor HAROLD WILLIAM, A.M., Ph.D., New York State College, Albany, New York State, U.S.A.
- 1906.*THOMSON, DAVID COUPER, J.P., D.L., Inveravon, Broughty Ferry.
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1927. THOMSON, J. F. GORDON, M.A., Advocate, 26 Heriot Row, Edinburgh, 3.
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- 1933.*THYNE, JAMES COWAN, St Helens, Downfield, Dundee.
1930. TOD, THOMAS M., West Brackly, Kinross.
1924. TOD, WILLIAM A., Dunrobin, Belfield Road, West Ewell, Surrey.
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1936. TOWILL, Rev. EDWIN S., M.A., B.D., Chalmers Manse, 27 Windsor Street, Dundee.
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1917. TRAILL, WILLIAM, C.E., J.P., Holland, Papa Westray, Orkney.
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1937. TYZACK, FRANCIS JAMES, A.R.P.S., 15 Barkers Road, Nether Edge, Sheffield, 7.
- 1917.*URQUHART, ALASTAIR, D.S.O., Bachelors' Club, Piccadilly, London, W. 1.
1930. VALL, THOMAS H., A.C.A., Pakington House, Rosemary Hill Road, Little Aston, Staffs.

- 1935.*VALENTINE, WILLIAM HARRIS, The Mansion House, Auchterhouse, by Dundee.
1936. VAN GIFFEN, Professor A. E., Biologisch Archaeologisch Instituut, Rijks Universiteit, Portstr. 6, Groningen, Holland.
- 1920.*VARMA, Prof. S. P., M.A., of Robertson College (no address).
1933. VEITCH, GEORGE, C.A., 14 Chalmers Crescent, Edinburgh, 9.
1927. VERNON, Rev. WILLIAM FREDERIC, M.A., B.D., Holy Trinity Rectory, Alloway Place, Ayr.
1921. WADDSELL, J. JEFFREY, I.A., Architect, Caldergrove, Hallside, Lanarkshire.
1934. WAITES, JAMES ARTHUR, A.M.E.E.S., F.R. Asiatic S. (no address).
1928. WALKER, ALEXANDER, 424 Great Western Road, Aberdeen.
1928. WALKER, Rev. GEORGE A. EVERETT, Minister of Parish of Benholme, Manse of Benholme, Johnshaven, Montrose.
1937. WALKER, NINIAN, Solicitor, Commercial Bank Buildings, Dunfermline.
1926. WALKER, ROBERT J., M.A., 17 Pentland Crescent Edinburgh, 10.
- 1924.*WALKER, W. GLASSFORD, C.A., 2 Denham Green Avenue, Edinburgh 5.
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- 1908.*WATSON, JOHN PARKER, W.S., Greystane, Kinellan Road, Murrayfield, Edinburgh, 12.
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- 1927.*WATSON, WILLIAM ELDER, O.B.E., J.P., Moray Bank, Elgin.
1912. WATSON, WILLIAM J., M.A., LL.D., D.Litt.Celt., F.R.S.E., Emeritus Professor of Celtic Languages, Literature and Antiquities, University of Edinburgh, 17 Merchiston Avenue, Edinburgh, 10.
1933. WATT, Rev. DOUGLAS W., M.A., The Manse of Pluscarden, Elgin.
1907. WATT, JAMES, LL.D., W.S., F.F.A., 7 Blackford Road, Edinburgh, 9.
1908. WATT, The Very Rev. LAUCHLAN MACLEAN, M.A., B.D., D.D., LL.D., Kinloch, Lochcarron, Ross-shire.
- 1923.*WATT, WILLIAM J. C., M.B., Ch.B., 71 High Street, Paisley.
1937. WEDDERBURN, ERNEST MACLAGAN, M.A., LL.B., D.Sc., LL.D., Deputy Keeper of His Majesty's Signet, 6 Succoth Gardens, Edinburgh, 12.
1928. WEIR, Rev. HAROLD GEORGE MULLO, M.A., The Manse, Dalry, Kirkeudbrightshire.
1925. WEIR, JAMES MULLO, S.S.C., 21 Mayfield Terrace, Edinburgh, 9.

1927. WEIR, WALTER, 18 Cathkin Road, Langside, Glasgow.
1926. WESTELL, WILLIAM PERCIVAL, F.L.S., M.R.A.I., The Museum, Town Square, Letchworth, Hertfordshire.
1932. WESTON, PERCY WILLIAM, F.R.E.S., F.R.G.S., F.R.H.S., F.C.S., F.Z.S., Villa Chappott, Tangier, Morocco.
1937. WESTWATER, ALEXANDER, Publisher, Station Road, Lochgelly, Fife.
1925. WHITE, WILLIAM, 28 Shore Road, Anstruther, Fife.
- 1902.*WHITELAW, CHARLES EDWARD, F.R.I.A.S., 22 Midmar Gardens, Edinburgh, 10.
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1909. WHITTAKER, CHARLES RICHARD, F.R.C.S., F.R.S.E., Lynwood, 27 Hatton Place, Edinburgh, 9.
1937. WIGHTMAN, A. STUART, F.R.A.I., F.Z.S., Melville Gardens, Bishopbriggs, Glasgow.
1897. WILLIAMS, H. MALLAM, J.P., Tilehurst, 34 Southern Road, West Southbourne, Bournemouth, Hants.
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1935. WILSON, ARTHUR W., Fern Bank, Loughborough Road, Kirkealdy.
1933. WILSON, DAVID, A.R.I.A.S., 15 Prospect Bank Place, Leith, Edinburgh, 6.
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1934. WILSON, Captain MAURICE J. H., The Queen's Own Cameron Highlanders, Ashmore, Bridge of Cally, Perthshire.
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- 1927.*WILSON, ROBERT, 139 Princes Street, Edinburgh, 2.
- 1923.*WILSON, Rev. S. GORDON F., M.A., B.Litt., A.K.C., F.R.Hist.S., Blean Vicarage, near Canterbury, Kent.
1913. WILSON, Rev. THOMAS, B.D., D.D., The Manse of St Mary of Wedale, Stow, Midlothian.
1920. WISHART, DAVID, Pittarrow, Abernethy, Perthshire.
- 1934.*WISHART, FREDERICK, 632 King Street, Aberdeen.
1929. WOLFENDEN, WILLIAM, J.P., Cluny Villa, Kingussie, Inverness-shire.
1936. WOOD, WILLIAM HENRY, Missioner to the Deaf, 15 Kilnburn, East Newport, Fife.
1930. WRIGHT, ALEXANDER, L.R.I.B.A. (no address).
1938. WRIGHT, Rev. RONALD SELBY, M.A., The Manse of the Canongate, Edinburgh, 8.
1927. WRIGHT, Rev. WILLIAM, M.A., B.D., Minister of the Parish of Wardlawhill, 21 Chincarthill, Rutherglen.
1925. WYNESS, J. FENTON, A.R.I.B.A. A.I.Archts.Scot., 45 Salisbury Terrace, Aberdeen.
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1934. YOUNG, T. P. W., A.R.I.B.A., 95 Bath Street, Glasgow, C. 2.
1937. YOUNG, WILLIAM ROSS, "Drumveigh," Barnton Avenue, Edinburgh, 4.
- 1924.*YOUNGER, HARRY J., 21 Douglas Crescent, Edinburgh, 12.
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| 1923. BLACK, GEORGE F., Ph.D., 325 Watson Avenue,
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| 1927. BREMNER, SIMON, Mid Town, Freswick, Caithness. | 1915. MORRISON, MURDO, Lakelfield, Bragar, Lewis. |
| 1928. FORTUNE, JOHN ROBERT, Airhouse, Oxtou,
Berwickshire. | 1931. SMITH, SAMUEL, Mumrills, Laurieston, near
Falkirk. |
| 1913. FRASER, JOHN, 9 Gladstone Place, Leith,
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| 1933. MANN, ALEXANDER, 22 Boyd Street, Laurieston,
Falkirk. | 1933. YORSTON, JAMES, Hullion, Rousay, Orkney. |

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OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1938.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1897.

SIR W. M. FLINDERS PETRIE, D.C.L., LL.D., F.B.A., F.R.S., Emeritus Professor of Egyptology
in University College, London, W.C. 1.

1908.

SIR ARTHUR JOHN EVANS, M.A., D.C.L., Youlbury, near Oxford.
Professor H. DRAGENDORFF, Freiburg i. Baden, Johan von Weirhstrasse 4.

1923.

- M. L'ABBÉ H. BREUIL, D.L.C., Professeur au Collège de France et à l'Institut de Paléontologie
Humaine, Paris, 52 Avenue de la Motte Piquet, Paris, XV^e.
5 Professor FRANZ CUMONT, 19 Corso d'Italia, Rome.
Sir G. F. HILL, K.C.B., M.A., LL.D., F.B.A., Litt.D., F.S.A., 12 Sussex Place, Regent's Park, London,
N.W. 1.
FRANK GERALD SIMPSON, M.A., 45 Fern Avenue, Jesmond, Newcastle-upon-Tyne.
MRS ARTHUR STRONG, C.B.E., Litt.D., LL.D., F.S.A., Life-Fellow of Girton College, Cambridge, and
Assistant Director of the British School at Rome, 35 Via Balbo, Rome (22).
A. M. TALLGREN, Professeur Universitetet, Helsingfors, Finland.

1926.

- 10 MARCELLIN BOULE, Professor in the Muséum National d'Histoire Naturelle, and Director of the Institut de Paléontologie Humaine, 1 rue René Panhard, boulevard Saint-Marcel, Paris 13^e.
Professor Dr philos. A. W. BRØGGER, Bestyrer av Universitetets Oldsaksamling, Tullinløkken, Oslo, Norway.
O. M. DALTON, M.A., F.B.A., Uplands, Bathwick Hill, Bath.
Professor Dr ERNST FABRICIUS, Geheimer Rat, Goethestrasse 44, Freiburg im Breisgau, Germany.
Sir ARTHUR KEITH, M.D., D.Sc., LL.D., F.R.C.S. (Eng.), F.R.S., Conservator of the Museum and Hunterian Professor, Royal College of Surgeons of England; Past-President of the Royal Anthropological Institute of Great Britain and Ireland, and of the Anatomical Society.
Master of the Buckston Browne Farm, Downe, Farnborough, Kent.
- 15 Dr R. PARIBENI, Director of the Institute of Archæology of Rome, Museo Nazionale Romano, Rome.

1927.

DON HERMILIO ALCALDE DEL RIO, Torrelavega, Santander, Spain.

1931.

Mrs M. E. CUNNINGTON, 33 Long Street, Devizes, Wiltshire.
Professor Dr ROBERT ZAHN, Director bei den Staatlichen Museen, Honorar-professor an der Universität, Am Lustgarten, Berlin, C.2.

1933.

Professor Dr philos. HAAKON SHETELIG, Bergens Museums Oldsamling, Bergen, Norway.

1935.

- 20 Professor GERHARD BERSU, Zentralkdirektion des Archæologischen Instituts des Deutschen Reiches, Viktoriastrasse 27, Berlin, W. 35.

LIST OF THE LADY ASSOCIATES
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND,
NOVEMBER 30, 1938.

[According to the Laws, the number is limited to TWENTY-FIVE.]

1900.

Miss M. A. MURRAY, Edwards Library, University College, London, W.C. 1.

SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

- | | |
|---|---|
| <p>Architectural, Archæological, and Historic Society
of Chester and North Wales.</p> <p>Belfast Natural History and Philosophical Society.</p> <p>Berwickshire Naturalists' Club.</p> <p>Bristol and Gloucestershire Archæological Society.</p> <p>British Archæological Association.</p> <p>Buchan Club.</p> <p>Buteshire Natural History Society.</p> <p>Cambrian Archæological Association.</p> <p>Cambridge Antiquarian Society.</p> <p>Carmarthenshire Antiquarian Society.</p> <p>Courtauld Institute of Art.</p> <p>Cumberland and Westmorland Antiquarian and
Archæological Society.</p> <p>Derbyshire Archæological and Natural History
Association.</p> <p>Dumfriesshire Natural History and Antiquarian
Society.</p> <p>Edinburgh Architectural Association.</p> <p>Edinburgh Geological Society.</p> <p>Elgin Literary and Scientific Society.</p> <p>Essex Archæological Society.</p> <p>Gaelic Society of Inverness.</p> <p>Glasgow Archæological Society.</p> <p>Hampshire Field Club and Archæological Society.</p> <p>Hawick Archæological Society.</p> <p>Historic Society of Lancashire and Cheshire.</p> <p>Institute of Archæology, Liverpool</p> <p>Kent Archæological Society.</p> <p>Orkney Antiquarian Society, Kirkwall.</p> <p>Perthshire Society of Natural Science.</p> <p>Powys-land Club.</p> <p>Royal Anthropological Institute.</p> <p>Royal Archæological Institute of Great Britain
and Ireland.</p> <p>Royal Commission on Ancient and Historical
Monuments of Scotland.</p> <p>Royal Commi-sion on the Ancient and Historical
Monuments and Constructions in Wales and
Monmouthshire.</p> | <p>Royal Historical Society.</p> <p>Royal Institute of British Architects, London.</p> <p>Royal Irish Academy.</p> <p>Royal Numismatic Society.</p> <p>Royal Society of Antiquaries of Ireland.</p> <p>Scottish Ecclesiological Society.</p> <p>Shropshire Archæological Society.</p> <p>Society for the Promotion of Roman Studies.</p> <p>Society of Antiquaries of London.</p> <p>Society of Antiquaries of Newcastle-upon-Tyne.</p> <p>Somersetshire Archæological and Natural History
Society.</p> <p>Stirling Natural History and Archæological Society.</p> <p>Surrey Archæological Society.</p> <p>Sussex Archæological Society.</p> <p>Third Spalding Club.</p> <p>Thoresby Society.</p> <p>Viking Society for Northern Research.</p> <p>Wiltshire Archæological Society.</p> <p>Yorkshire Archæological Society.</p>
<p>Archæological Survey of India.</p> <p>British School at Rome.</p> <p>Colombo Museum, Ceylon.</p> <p>Royal Canadian Institute, Toronto.</p> <p>Royal Ontario Museum of Archæology, Toronto, 5,
Canada.</p> <p>University Museum, Dunedin, New Zealand.</p>
<p style="text-align: center;">FOREIGN SOCIETIES, UNIVERSITIES,
MUSEUMS, &c.</p> <p>Académie des Inscriptions et Belles Lettres, Paris.</p> <p>Académie des Sciences d'Ukraine, Kieff.</p> <p>Académie Royale Serbe, Belgrade.</p> <p>Administration des Monuments, Riga, Lettonie.</p> <p>Anthropologische Gesellschaft, Vienna, Ostmark,
Germany.</p> <p>Antiquarische Gesellschaft, Zurich.</p> <p>Archæological Institute of the Imperial University
of Kyoto, Japan.</p> |
|---|---|

- Archæologisches Institut D. Kon. Ung. Franz Joseph-Universität, Szeged, Hungary.
- Archæologisches Institut der Pázmány Universität, Budapest.
- Archäologisches Institut des Deutschen Reiches Römisch-Germanische Kommission, Frankfurt am Main.
- Associació Catalana d'Antropologia, Etnologia i Prehistòria, Barcelona Universität, Spain.
- Bosnisch-Herzegovinisches Landes-Museum, Sarajevo, Yugoslavia.
- Bureau of Ethnology, Washington.
- California University in Berkeley.
- Commissione Archeologica Comunale di Roma.
- Cornell University Library, Ithaca, New York.
- Čsl. státní archæologický ústav (Institut archéologique de l'Etat tchécoslovaque) Praha, Republika československá, Czechoslovakia.
- Department of Antiquities in Palestine, Jerusalem.
- Deutsch-ausländischer Buchtausch, Berlin.
- Ecole d'Anthropologie de Paris.
- Faculté des Sciences de Lyon.
- Field Museum of Natural History, Chicago.
- Foreningen til Norske Fortidsminde-merkere Bevaring.
- Göteborg och Bohusläns Fornminnesföreningen.
- Göttingen University.
- Historische und Antiquarische Gesellschaft, Basel.
- Historischer Verein für Niedersachsen.
- Institut Archéologique Bulgare, Sofia.
- Institut de Paléontologie Humaine, Paris.
- Istituto Italiano di Antropologia, Rome.
- Junta Para Ampliación de Estudios—Comisión de Investigaciones Paleontológicas y Prehistóricas, Madrid.
- Junta Superior de Excavaciones y Antigüedades, Madrid.
- Kiel University.
- Kongelige Norske Videnskabers Selskab, Trondhjem.
- Landesanstalt für Volksheilkunde, Halle a Saale, Saxony.
- Landesmuseum, Hannover.
- Landesmuseum Nassauischer Altertümer zu Wiesbaden.
- Leipzig University.
- Musée Archéologique Erasme Majewski de la Société des Sciences de Varsovie, Poland.
- Musée d'Art et d'Histoire, Geneva, Switzerland.
- Musée Guimet, Paris.
- Musée National Suisse à Zürich.
- Museum, Bergen, Norway.
- Museum of Northern Antiquities, Oslo.
- National Bohemian Museum, Prague, Czechoslovakia.
- National Museum, Zagreb, Yugoslavia.
- Nordiska Museet, Stockholm.
- Norsk Folkemuseum, Oslo, Norway.
- Oslo University, Norway.
- Peabody Museum, Cambridge, Mass., U.S.A.
- Prahistorische Kommission der Akademie der Wissenschaften in Wien, Ostmark, Germany.
- Prussia-Museum, Königsberg (P).
- Reale Accademia Nazionale dei Lincei, Rome.
- Rhein. Landesmuseum, Trier.
- Rijks-Museum van Oudheden, Leiden.
- Römisch-Germanisches Central Museum, Mainz, Germany.
- Royal Academy of History and Antiquities, Stockholm.
- Royal Society of Northern Antiquaries, Copenhagen.
- Schlesischer Altertumsverein, Breslau.
- Smithsonian Institution, Washington, U.S.A.
- Société d'Anthropologie de Paris.
- Société des Antiquaires de l'Ouest.
- Société Archéologique d'Alexandrie.
- Société Archéologique du Midi de la France.
- Société Archéologique de Montpellier.
- Société Archéologique de Moravie.
- Société Archéologique de Namur.
- Société des Bollandistes, Brussels.
- Société Finlandaise d'Archéologie, Helsingfors.
- Société d'Histoire et d'Archéologie de Gand.
- Société Nationale des Antiquaires de France.
- Société Préhistorique Française, Paris.
- Société Préhistorique Polonaise.
- Société Royale d'Archéologie, Bruxelles.
- Städtisches Museum für Völkerkunde, Leipzig.
- Stavanger Museum, Stavanger, Norway.
- Türk Tarih Kurumu, Ankara, Turkey.
- University Library, Lund, Sweden.
- University Library, Tartu, Estonia.
- Uppsala University.
- Verein für Nassauische Alterthumskunde, Wiesbaden.
- Verein von Alterthumsfreunden im Rheinlande, Bonn.
- Wiener Prähistorische Gesellschaft, Ostmark, Germany.

PERIODICALS.

L'Anthropologie, Paris.

Bulletin archéologique polonais, Warsaw.

LIBRARIES, BRITISH.

Athenæum Club Library, London.

Baillie's Institution, Glasgow.

Bodleian Library, Oxford.

British Museum Library.

Chetham's Library, Manchester.

Church of Scotland College Library, The Mound,
Edinburgh.

Free Library, Edinburgh.

Free Library, Liverpool.

Mitchell Library, Glasgow.

National Library of Scotland, Edinburgh.

National Library of Wales, Aberystwyth.

Ordnance Survey Library, Southampton.

Public Record Office Library, London.

Royal Library, Windsor.

Royal Scottish Museum Library, Edinburgh.

Scottish National Portrait Gallery Library.

Scottish Record Office, Historical Department.

Signet Library, Edinburgh.

Trinity College Library, Dublin.

University Library, Aberdeen.

University Library, Cambridge.

University Library, Edinburgh.

University Library, Glasgow.

University Library, St Andrews.

Victoria and Albert Museum Library, London.

LIBRARIES, FOREIGN.

Bayerische Staatsbibliothek, Munich, Bavaria.

Bibliothèque d'Art et d'Archéologie, Université de
Paris.

National Library, Paris.

National Library, Vienna.

Newberry Library, Chicago, U.S.A.

Preussische Staatsbibliothek, Berlin.

Public Library, Hamburg.

Royal Library, Copenhagen.

Royal Library, Stockholm.

Sächsische Landesbibliothek, Dresden.

PROCEEDINGS
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND

HUNDRED AND FIFTY-EIGHTH SESSION, 1937-1938

ANNIVERSARY MEETING, 30th November 1937.

THOMAS YULE, W.S., Vice-President, in the Chair.

Rev. Will Burnett, B.D., and Dr W. K. Dickson were appointed Scrutineers of the Ballot for Office-Bearers.

The Ballot having been concluded, the Scrutineers found and declared the List of the Council for the ensuing year to be as follows:—

President.

Sir GEORGE MACDONALD, K.C.B., LL.D., D.Litt., F.B.A.

Vice-Presidents.

THOMAS YULE, W.S.
Professor T. H. BRYCE, M.D., LL.D., F.R.S.
The Hon. LORD ST VIGEANS, LL.D.

2 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1937.

Councillors.

Colonel CHARLES L. SPENCER, C.B.E., D.S.O.	Rev. WILLIAM BURNETT, B.D. W. G. C. HANNA, O.B.E., C.A.
Brigadier-General E. CRAIG-BROWN, D.S.O.	W. DOUGLAS SIMPSON, D.Litt. Sheriff C. H. BROWN, K.C.
Sir FRANCIS J. GRANT, K.C.V.O., LL.D., Lord Lyon King of Arms.	WILLIAM ANGUS. WILLIAM K. DICKSON, LL.D.

Secretaries.

DOUGLAS P. MACLAGAN, W.S. ANGUS GRAHAM, M.A.

For Foreign Correspondence.

Professor V. GORDON CHILDE, D.Litt., D.Sc.	Professor W. M. CALDER, M.A., LL.D., F.B.A.
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Treasurer.

J. BOLAM JOHNSON, C.A.

Curators of the Museum.

JAMES CURLE, LL.D., W.S. JAMES S. RICHARDSON.

Curator of Coins.

ROBERT KERR, M.A.

Librarian.

ALEXANDER O. CURLE, C.V.O., LL.D.

Councillors ex-officio.

The Hon. Sir HEW H. DALRYMPLE, K.C.V.O.	} <i>Representing</i> <i>the Board of</i> <i>Trustees.</i>	JOHN A. INGLIS.	} <i>Representing</i> <i>the Treasury.</i>
KENNETH SANDERSON, W.S.			

A Ballot having been taken, the following were elected Fellows:—

GEORGE E. J. BELL. The Studio, 3 Challoner Crescent, West Kensington,
London, W.14.
ANDREW BLACK, "Carnethy," 8 Clepington Road, Maryfield, Dundee.
Miss MARY E. BOYLE, Kindrochat, Comrie, Perthshire.
LINDSAY FRANK BULLIVANT, L.R.I.B.A., 600 Stratford Road, Birmingham, 11.
The Rt. Hon. THE EARL OF CALEDON, Caledon Castle, Caledon, N. Ireland.
WILLIAM JOHN CAMERON, J.P., Estate Office, Flichity, by Inverness.

- JAMES DAVIDSON, M.B., Ch.B., F.R.C.P.E., 41 Brampton Grove, Hendon, London, N.W. 4.
 THOMAS DYKES, 3 Bank Street, Annan.
 SIDNEY FITZPATRICK, 35 Arnos Road, New Southgate, London, N.11.
 ROBERT JAMES GOOD, J.P., Maybank, 32 Alnwickhill Road, Liberton, Edinburgh, 9.
 The Very Rev. K. M. SUTHERLAND GRAEME, Provost of St. Paul's Cathedral, Dundee, 76 Blackness Avenue, Dundee.
 PATRICK SUTHERLAND GRAEME of Graemeshall, Orkney, C.B.E., J.P., Rose-ness, Harpenden, Herts.
 Sir REGINALD F. JOHNSTON, K.C.M.G., C.B.E., M.A.(Oxon.), LL.D.(Hong-kong), Eilean Rìgh, Kilmartin, Argyll.
 JOHN LEESE, "Dhu Varran," 267 Clepington Road, Dundee.
 CHARLES M. HEPBURN MILLAR, 17 Osborne Terrace, Edinburgh, 12.
 GEORGE COLLINGWOOD BROWNLOW POULTER, Collingwood Place, Camberley, Surrey.
 F. W. ROBERTSON, M.A., Ph.D., Librarian, 49 Dempster Street, Wick, Caithness.
 WILLIAM STEWART IRVINE ROBERTSON, M.B., Ch.B., Medical Officer, St. Mary's House, Dumfries.
 WALTER SEMPLE, M.A., LL.B., Neidpath, Whitecraigs, Renfrewshire.
 A. S. SILVER, M.B., Ch.B.(Edin.), B.A.(Oxon.), The Old Parsonage, Davidson's Mains, Edinburgh, 4.
 WILLIAM B. STEVENSON, D.Litt., D.D., Emeritus Professor, 31 Mansionhouse Road, Edinburgh, 9.
 HARALD HACO SUTHERLAND, Solicitor, 23 Culzean Crescent, Kilmarnock, Ayrshire.
 FRANCIS JAMES TYZACK, A.R.P.S., 15 Barkers Toad, Nether Edge, Sheffield, 7.
 GUY ARTHUR WARD, Genealogist, 81 Brookdene Avenue, Oxley, Watford.
 ALEXANDER WESTWATER, Publisher, Station Road, Lochgelly, Fife.
 A. STUART WIGHTMAN, Ashley, Brackenbrae Avenue, Bishopbriggs, Glasgow.

The Secretary read the list of Members deceased since the last Annual Meeting:—

Fellows.

	Elcted.
JOHN BARTHOLOMEW, O.B.E., LL.D., of Glenorchard, Sheriff-Substitute of Lanark, Nunholm, 9 Victoria Circus, Glasgow	1909
CHARLES S. M. BOMPAS, Flat 10, 24 Palace Court, London, W. 2	1885
HENRY BORTHWICK of Borthwick Castle, 122 Great Western Road, Glasgow	1903
ROBERT CRAIG COWAN of Achnadrish, Lochside Cottage, Duddingston, Edinburgh	1920
Rev. THOMAS CRAWFORD, B.D., The Elms, Whitehouse Loan, Edinburgh	1908
DAVID DUNCAN, J.P., Parkview, Balgay Road, Dundee	1917
JOHN EDWARDS, LL.D., F.R.S.E., 5 Great Western Terrace, Glasgow	1892
GEORGE EYRE-TODD, J.P., Auchendarick, by Balloch	1925

4 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1937.

	Elected
SCOTT GUNN, Tynedale Hydropathic, Hexham, Northumberland	1934
S. DOUGLAS JACKSON, 73 West George Street, Glasgow	1923
FREDERICK JOHNSTON, J.P., Woodville, Falkirk	1935
J. NOEL JOHNSTON, Hon. Secretary, Montrose Natural History and Antiquarian Society, 1 Panmure Place, Montrose	1936
ALEXANDER BURGESS KENNEDY, 1 Randolph Place, Edinburgh	1911
Rev. G. A. FRANK KNIGHT, M.A., D.D., F.R.S.E., 66 Great George Street, Glasgow	1928
Miss JANE C. C. MACDONALD of Ballintuim, L.L.A., Windmill House, Arbroath	1923
W. LAIDLAW MCDUGALL, Sumburgh, Shetland	1932
THOMAS W. MACDOWALL, M.D., of Wadhurst, Tunbridge Wells	1872
WILLIAM MACINTYRE, Schoolhouse, Cronberry, Cumnock, Ayrshire	1934
R. W. R. MACKENZIE, Springbank, Isla Road, Perth	1882
Rev. ANDREW COLQUHOUN MACLEAN, The Manse, Conton, Ross-shire	1926
Rev. KENNETH A. MACRITCHIE, Parish Manse, Laing, Sutherland	1929
The Rt. Hon. Sir HERBERT EUSTACE MAXWELL, Bart., K.T., P.C., D.C.L., LL.D., F.R.S., Monreith, Whauphill, Wigtownshire	1884
Mrs GRAY MUIR, 17 Grosvenor Crescent, Edinburgh	1931
Rev. DONALD MUNRO, D.D., Free Church Manse, Ferintosh, Rogart, Sutherland	1928
JOHN WHITEHILL PARSONS, Broomers House, Pulborough, Sussex	1931
ALEXANDER REEKIE, J.P., 22 Greenlaw Avenue, Paisley	1928
JOHN RENNIE, Wellcroft, Helensburgh	1921
Sir H. ARTHUR ROSE, Bart., D.S.O., D.L., LL.D., 23 Ainslie Place, Edinburgh	1924
ALEXANDER SIMPSON, J.P., West Leigh, Pitfodels, Aberdeenshire	1927
Captain GEORGE S. C. SWINTON, 28 Albert Hall Mansions, London	1900
ALASTAIR N. TAYLER, B.A.(Oxon.), 181 Queen's Gate, London	1927
EDWARD JOHN THOMSON, 6 Windsor Terrace West, Kelvinside, Glasgow	1921
ROBERT F. WILLIAMSON, 4 Grange Terrace, Edinburgh	1928

The Meeting resolved to record their sense of the loss the Society had sustained in the death of these Members.

The Secretary read the following Report by the Council on the affairs of the Society:—

The Council beg to submit to the Fellows of the Society their Report for the year ending 30th November 1937.

Fellowship.—The total number of Fellows on the roll at 30th November 1936 was 1034
At 30th November 1937 the number was 1019

being a decrease of 15

The number of new Fellows added to the roll during the year was 47, while 33 died, 19 resigned, and 12 allowed their membership to lapse. During the last six years there has been a loss of about 50 in our membership, perhaps not serious, considering the large Fellowship and the times through which we are passing; but if the Society is to maintain its influence and activities losses should, if possible, be made up, and Fellows are asked to do what they can amongst friends interested in archæology to enlist new recruits.

It is with the deepest regret that we have to record the death of Sir Herbert Maxwell, one of the oldest as he was one of the most eminent Fellows of the Society. He passed away after a very brief illness, at Monreith, his home in Galloway, at the age of ninety-two, on 30th October.

Though Sir Herbert was distinguished as a man of letters, it is not with that aspect of his career that we wish to deal here. That has been referred to in numerous notices elsewhere, but it is his interest in archæology, his connection with this Society, and his constant interest in its aims that we should like to emphasise.

It was when his father drained the Loch of Dowalton, in 1863, that Sir Herbert first showed his interest in archæological research. The draining exposed a group of crannogs which were excavated by Sir Herbert and a party of friends, and a number of valuable relics were recovered and handed over to the National Museum. This led to further research in crannogs in Galloway, with valuable results.

In the busy life of a copious writer, as Member of Parliament, and proprietor of a large estate taking an active part in the administration of county affairs, there was little leisure, as his life developed, for excavations. His early interest, however, remained active. In 1877 he was one of a body of friends who founded a Society to publish the Records, antiquarian and historical, of the counties of Ayr and Wigtown, later Ayr and Galloway, and for a number of years he assisted as Secretary. He was the author of a communication on the Heraldry of Galloway, illustrated by plates prepared by himself. From his own neighbourhood he gathered together a collection of antiquities which he eventually presented to the Museum.

He was elected President of the Society in 1900, and continued to occupy the post for thirteen years.

When the Royal Commission on Ancient and Historical Monuments (Scotland) was appointed he was the obvious Chairman, a post which he gladly accepted and which he filled till 1935, when, owing to his advanced age, he considered it wise to retire.

6 PROCEEDINGS OF THE SOCIETY, NOVEMBER 30, 1937.

He was Rhind Lecturer for the years 1893 and 1911, his subjects being "The Place-Names of Scotland" and "The Early Chronicles relating to Scotland."

The honours and distinctions that were bestowed on him were numerous. He was a Privy Councillor, a Knight of the Order of the Thistle, Fellow of the Royal Society, Lord Lieutenant of Wigtownshire since 1903, a Lord of the Treasury, 1886-1892. D.C.L., LL.D., Chairman of the Royal Commission on Tuberculosis, 1897-98, and though eighty years of age at the founding of the National Library, he was unanimously elected Chairman of the Library Trustees.

At our meetings he was frequently to be seen and occasionally heard, and many must recall his short, neat figure, dignified bearing, and full clear voice. As late as the Annual General Meeting of 1935 he moved the adoption of the President's Report.

Proceedings.—An advance copy of the *Proceedings* lies upon the table. Twenty-six papers were read during the session, of which seventeen dealt with prehistorical and nine with historical subjects.

The Museum.—The number of relics added to the collections amounted to 355 by donation and 52 by purchase.

As usual, the largest proportion belong to the prehistoric period. Mr Walter G. Grant has again presented a considerable number of very important relics, chiefly from excavations carried out by him in Orkney. These include Neolithic and Iron Age pottery and other relics from the long stalled cairn, the Knowe of Rowiegar; a Bronze Age urn of clay and another of steatite, with two unique objects of the same material from short cists at Quandale; Iron Age pottery and stone implements from an earth-house at Grippe, and some typical bone objects, including long-handled weaving combs from the Broch of Home, Sanday, Orkney. Major Harry H. Hebden, M.C., has given a large collection of Neolithic and Iron Age pottery and other relics from a long stalled cairn and another site on the Calf of Eday, Orkney. Dr J. J. Galbraith, F.S.A.Scot., presented a Bronze Age beaker and part of another from Findon, Ross-shire, while part of a beaker and a cinerary urn, with a bone pendant contained in it, found at Craigentinn, were purchased.

Our Roman collections have been augmented by the gift of a Roman altar from Newstead by Dr James Curle, and of an intaglio from the Roman Wall, at Bearsden, by Mr Ludovic McLellan Mann.

Three sculptured stones belonging to the Christian Period have been presented: part of a cross-slab from St Ola, Whiteness, Shetland,

by Mr E. S. Reid Tait; part of a cross-shaft, originally at Cambusnethan, Lanarkshire, by the County Council of Lanarkshire; and a cross-shaft dating to about 1500, from Eilean Mor, Argyll, by Colonel D. F. Neill of Keills.

Excavations.—Further excavations at the Roman fort at Fendoch, Perthshire, have been carried out by Mr Ian Richmond, F.S.A.Scot., and Mr J. Macintyre. The exploration of a Viking site at Freswick Bay, Caithness, has been begun by Dr A. O. Curle, and Mr C. S. T. Calder has examined a stalled cairn and a later site on the Calf of Eday, Orkney. Interesting structural features have been discovered on all these sites, and some very important relics recovered.

The Library.—The additions to the Library amounted to 111 by donation and 23 by purchase. In addition, a large number of publications of learned societies, etc., have been received by way of exchange and subscription. 152 books have been bound under the grant from H.M. Treasury for this purpose.

The Rhind Lectureship.—The Rhind Lectures for 1937 were delivered this month by Dr C. A. Malcolm, the subject being “Mediæval Edinburgh.” The course for 1938 will be given by Monsieur Claude Schaeffer of the National Museum of Antiquities of France on his excavations at Ras Shamra, and that for 1939 will be delivered by Professor Haakon Shetelig, Bergen, on the “Early Art of Scandinavia.”

The Gunning Fellowship.—The Gunning Fellowship for 1937 was awarded to Mr A. J. H. Edwards to enable him to visit archæological sites in Caithness and Orkney.

The Chalmers-Jervise Prize.—The district selected for the Chalmers-Jervise Prize Essay for 1937 was Lanark and Bute. Two essays were received, and the prize was awarded to Miss Dorothy N. Marshall for her essay on “Caves in Bute and the Cumbræes.”

GEORGE MACDONALD,
President.

NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND,
QUEEN STREET, EDINBURGH.

The Report was adopted on the motion of Mr John A. Inglis, King's Remembrancer, seconded by Dr Alex. O. Curle.

MONDAY, 13th December 1937.

PROFESSOR THOMAS H. BRYCE, M.D., F.R.S., Vice-President,
in the Chair.

A Ballot having been taken, the following were elected Fellows:—

Rev. WALTER ROBERT HORTH, A.K.C., "The Bield," Stonebridge, Shalford,
Guildford, Surrey.

WILLIAM CHARTERS HUNTER, 95 Renfield Street, Glasgow, C. 2.

JAMES ALEXANDER LOGGIE, M.A., Schoolhouse, Manor, Peebles.

WILLIAM MACINTOSH, Hermon Cottage, 7 Well Road, Dundee.

DAVID ROBERTSON, LL.B., S.S.C., Town Clerk, Edinburgh, 10 Strathearn
Place, Edinburgh, 9.

Mrs STEWART, Murdostoun Castle, Newmains, Lanarkshire.

The following Donations to the Museum received during the recess,
from 10th May to 30th November, were intimated, and thanks voted
to the Donors:—

- (1) Bequeathed by Mrs MARY B. STUART, through Messrs JOHN C.
BRODIE & SONS, W.S.

Lamp in the form of a hollow Silver Ball, measuring 4 inches in
diameter, showing pierced nautical designs in circular panels, and bearing
the name JENS ULRICH, 1702.

- (2) By T. I. MALCOLM, 98 High Street, Dunbar.

Sugar Cutter for breaking up sugar loaves, made by LOWE, Glasgow,
and Tea-leaf Cutter, both used by a grocer in Dunbar.

- (3) By JOHN M. CORRIE, F.S.A.Scot.

Piece of Cramp from Papa Stour, Shetland.

- (4) By CHARLES CUMMING CALDER, F.S.A.Scot.

Anvil-stone of subtriangular shape, measuring $7\frac{3}{4}$ inches by $7\frac{1}{4}$ inches
by $3\frac{1}{8}$ inches, found in a drystone dyke on White Mire Farm, Dyke,
Morayshire.

(5) By WALTER G. GRANT, F.S.A.Scot.

Two pieces of Cramp found near a burial mound at Stenness, Orkney.

Piece of Kelp Slag from North Ronaldsay.

Four Weaving Combs of Deerhorn, all slightly imperfect. (1) measuring $5\frac{1}{4}$ inches long, with four teeth remaining and six broken off; (2) measuring $4\frac{11}{16}$ inches long, the end of the handle notched, with four teeth and stumps of two more remaining; (3) measuring $4\frac{7}{16}$ inches long, with two teeth and remains of seven remaining, has two parallel incised lines on the upper face of the handle; (4) both ends imperfect, measuring $2\frac{7}{8}$ inches long, stumps of six teeth remaining. Weaving Comb of Deerhorn, partially made, the teeth not yet cut out, measuring $4\frac{11}{16}$ inches long; Thin oval Plate of Deerhorn, measuring $3\frac{9}{16}$ inches in length, $1\frac{7}{16}$ inch in breadth, and $\frac{1}{8}$ inch in thickness, pierced at one end by a large hole and by four smaller ones in other parts: the upper surface is almost covered with oblique incised lines. Object of Cetacean Bone of unknown use, measuring $8\frac{1}{4}$ inches in length, having broad shallow grooves at various places; Domical Whorl of Bone, made from the proximal end of an animal's femur, measuring $1\frac{7}{16}$ inch in diameter and 1 inch in height; Pin head, of flattened spheroidal shape, with a perforation below, measuring $1\frac{5}{16}$ inch in diameter and $\frac{11}{16}$ inch in height, formed from a horse's tooth; Stone Whorl, $1\frac{3}{16}$ inch in diameter; Tooth of seal. Three fragments of a vessel of hard dark Pottery; Finger-ring of Silver, in three coils, measuring $\frac{27}{32}$ inch in diameter, and Toggle or Ring of Bone, of irregular form, measuring 1 inch by $\frac{15}{16}$ inch in cross diameters. All found in the Broch of Howe, Sanday, Orkney, the last two specimens lying together in a recess or aumrie in the wall.

Cutting edge of an Axe of greenstone, found in Caithness.

Barbed Arrow-head of grey Quartz, measuring $\frac{3}{4}$ inch by $\frac{11}{16}$ inch, slightly imperfect, found in the field containing a Cairn, to the west of the steading on the farm of Trumland, Rousay, Orkney.

Flint Nodule, measuring $1\frac{5}{16}$ inch by $1\frac{3}{16}$ inch by $\frac{15}{16}$ inch, naturally perforated and showing signs of battering on the periphery.

Stone Axe, measuring $7\frac{13}{16}$ inches by $2\frac{15}{16}$ inches, found in the field adjoining the Broch of Midhowe, Rousay, Orkney.

Collection of relics from the Long Stalled Cairn and later intrusive buildings, at Rowiegar, Rousay, Orkney.

Collection of Stone Implements and fragments of Pottery, etc., from an Earth-house at Gripps, Rousay, Orkney. (See communications by Walter G. Grant, F.S.A.Scot., to appear in Vol. LXXIII.)

Stone Axe-like Object, measuring $6\frac{13}{16}$ inches by $1\frac{7}{8}$ inch, from the island of Wyre, Orkney.

Mushroom-shaped object of stone with a chisel-shaped stem, tapering to a rounded point, measuring $3\frac{5}{8}$ inches in length, and $2\frac{3}{4}$ inches by $2\frac{5}{8}$ inches in cross diameters across the head (fig. 1), found at Rinyo, Rousay, Orkney.



Fig. 1. Stone Object from Rinyo, Rousay. ($\frac{1}{4}$.)

Iron Medal, struck by the Germans to celebrate the sinking of S.S. *Lusitania*.

Communion Token of Tingwall.

(6) By LUDOVIC McLELLAN MANN, F.S.A.Scot.

Intaglio of Chalcedony, bearing the figure of a woman, facing right, holding a plate in the right hand and an olive branch in the left. To the

left is an altar with a fire on it. Found by Andrew Macdougall, when digging in a garden on the line of the Roman Wall at Bearsden, Glasgow.

(7) By JAMES S. RICHARDSON, F.S.A.Scot.

Early eighteenth-century Candlestick of Brass, with octagonal domed base, measuring $5\frac{3}{4}$ inches in height.

Pair of pocket Candlesticks of Brass, the component parts of which can be taken apart and screwed into smaller compass for transport.

Iron Fish Spearhead, with five barbed prongs, four set in a square and one in the centre. It has a sharply tapering socket, without a pin-hole, measuring $1\frac{1}{2}$ inch in diameter at the mouth and $11\frac{1}{2}$ inches in length; attached to the socket is a stout rope loop. After striking, the shaft was retained in the hand, and the creature speared was dragged in with a line attached to the loop.

Flat box of sheet Iron, measuring $3\frac{7}{8}$ inches by 2 inches by $\frac{1}{2}$ inch. The lid is hinged at one corner and decorated with crossed incised fishes; on the bottom is "BEN SWISS. 1726."

(8) By H.M. COMMISSIONERS OF WORKS.

Four Objects of green Glass, of square section, measuring $1\frac{3}{8}$ inch in height, and tapering upwards from $1\frac{1}{4}$ inch to $1\frac{1}{8}$ inch at the top, with a deep circular socket in the top, used in weaving. Found in the foundations of old weavers' houses in St Thomas Street, Arbroath.

(9) By JOHN MACASKILL, Kallin, Grimisay, Lochmaddy.

Wooden Vessel, with an oval bowl rudely cut out of the solid, measuring $8\frac{3}{8}$ inches by $5\frac{7}{16}$ inches by $3\frac{1}{8}$ inches, the handle $3\frac{1}{2}$ inches long, found 8 feet deep in a peat moss, on the island of Grimisay, Outer Hebrides.

(10) By WALTER DICKSON, F.S.A.Scot.

Heraldic Panel of grey Sandstone, measuring 22 inches by 18 inches. It bears the Hammermen's arms (a hammer with crown above), and "CM IA 1686." The arms are enclosed in a panel with a cherub's head and drapery at the top, the latter continuing down the sides. It is said to have come from 190 High Street, Edinburgh, the old Hammermen's Hall at the foot of Old Fishmarket Close.

(11) By C. E. GILLON, 2 Brunton Place, Edinburgh.

Iron Sway.

12 PROCEEDINGS OF THE SOCIETY, DECEMBER 13. 1937.

- (12) By ROBERT BRYDEN, 14 Lurgan Road, Parkview, Johannesburg, through Sir JOHN STIRLING MAXWELL, Bart., K.T., F.S.A.Scot.

Stone Axe, measuring $6\frac{5}{16}$ inches by $2\frac{3}{4}$ inches by $1\frac{7}{16}$ inch, found on 11th May 1900 on the farm of Fodderty, near Dingwall, Ross-shire.

- (13) By Miss M. C. GRIEVE, Minnydow, Castle Douglas.

Silver gilt Memorial Medallion of Charles I., oval in shape, with a fixed loop and free ring for suspension at the top, and a pendant pearl below. *Obv.* Portrait of the King, in relief, half facing the left, with Carolus Primus above: *rev.* the Royal Arms and initials C.R.

Gold Memorial Ring of Charles II., the shoulders chased and enamelled black; the bezel is oval and contains a miniature of the King under glass.

Gold Noble of Edward IV.

These objects were a gift from Andrew Lang, the Scottish scholar, poet and historian (1844–1912), to his niece, Betha Helen Grieve (*ob.* 31 : 5 : 37), member of a family which for more than three centuries had its home at Branhholm Park near Hawick. They are presented by her desire and in memory of her and her uncle.

- (14) By Miss MARGARET HALL, 25 Bruntsfield Avenue, Edinburgh.

Horn Ladle originally used in The Allan Ramsay Hotel, Carlisle, measuring 17 inches in length.

- (15) By THOMAS D. BATHGATE, F.S.A.Scot.

Wooden Toddy Ladle, measuring $18\frac{1}{2}$ inches long, from Caithness.

- (16) By H.M. COMMISSIONERS OF NORTHERN LIGHTS.

Irregularly shaped piece of Sandstone, measuring $16\frac{3}{4}$ inches by $15\frac{1}{2}$ inches by $5\frac{5}{8}$ inches, with a smooth cavity near one side on the top, measuring $5\frac{1}{4}$ inches in diameter and $2\frac{3}{8}$ inches in depth. Found at an ancient structure on the Muckle Skerry, Pentland Firth, which has already yielded sherds of pottery, apparently of broch type, and a double small-toothed comb of bone.

- (17) By THE COUNTY COUNCIL OF LANARK, in exchange for a Replica in synthetic stone.

Lower part of the Shaft of a Cross of Sandstone, with a tenon, $2\frac{3}{4}$

inches long, measuring 2 feet $7\frac{1}{2}$ inches long, 13 inches wide at the top, 14 inches at the bottom, and $6\frac{1}{2}$ inches thick (fig. 2). On the front, in a single panel with a moulding on each side, is a swastika key pattern, above which is a transverse four-cord plait, and below a group of three men

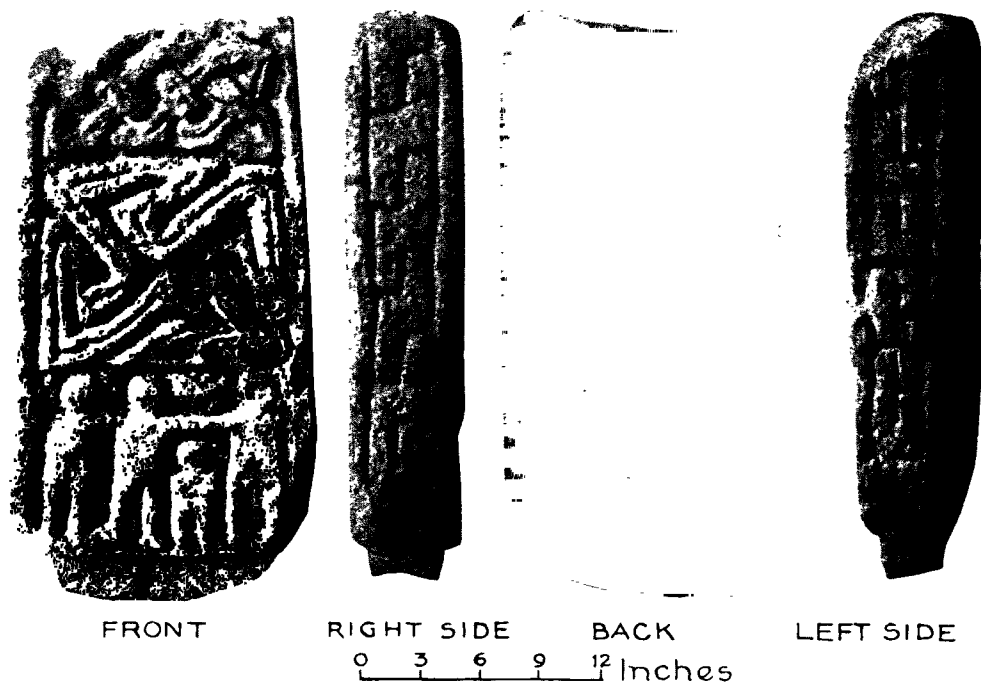


Fig. 2. Fragment of Cross-shaft from Cambusnethan, Lanarkshire.

with arms joined, and a smaller figure passing between two of the taller, underneath their arms. On the back is a panel, with two four-cord plaits at the top, a swastika key pattern in the centre, and a mutilated interlaced pattern below. Most of the interlaced and key patterns are double beaded. On each side is a panel containing a square key pattern. From the old Kirkyard of Cambusnethan, Lanarkshire. It was re-erected in Cambusnethan Cemetery, and was transferred to the National Museum with the consent of the Town Council of Motherwell and Wishaw. (See *Early Christian Monuments*, part iii., p. 461, fig. 482.)

(18) By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the National Museum.

Shilling of King George VI.. 1937. Scottish type.

(19) By W. GILLIES, 8 Gailes Road, Troon.

Hemispherical Cup of grey sandstone, without a handle, measuring $4\frac{1}{4}$ inches in diameter at the mouth and $2\frac{5}{8}$ inches in height, found near the middle of Sandwick Bay, Unst, Shetland, 10 to 15 yards from the present High Water Mark, where the sea is distinctly encroaching on the land.



Fig. 3. Roman Altar from Newstead.

(20) By D. P. MACLAGAN, F.S.A.Scot.

Paper Mould of a Cup and Ring-marked Stone at Bardeston Farm, Creetown, Kirkcudbrightshire, from which a cast has been made for the Museum.

(21) By JAMES CURLE, F.S.A.Scot.

Roman Altar of yellow Sandstone (fig. 3), measuring 4 feet by 19 inches by 15 inches. On the face is the inscription I.O.M. GARRIVS DOMITIAVS LEGXXV. V.S.L.L.M., and two Rotatory Querns with upper and lower stones of Niedermendig basalt lava, the upper with iron millrind and loop at the side for the handle, measuring $15\frac{1}{2}$ inches and 16 inches in diameter, the upper and lower stones $4\frac{1}{2}$ inches and 3 inches and $4\frac{1}{2}$ inches and $5\frac{1}{2}$ inches in thickness. From Newstead Roman Fort. (See JAMES CURLE, *A Roman Frontier Post*, pp. 142 and 145.)

(22) By WALLACE THORNEYCROFT, F.S.A.Scot.

Five rim and two basal fragments of red and dark coloured Pottery Vessels, found in a hut-circle at Dalrulzion, East Perthshire, by the donor. (See *Proceedings*, vol. lxxvii. p. 197, fig. 7, Nos. 1-7.)

The following Donations to the Library received during the recess, from 10th May to 30th November, were intimated, and thanks voted to the Donors:—

(1) By HIS MAJESTY'S GOVERNMENT.

Calendar of State Papers. Colonial Series. America and West Indies. 1724–1725 and 1726–1727. London, 1936. 1728–1729. London, 1937.

Calendar of State Papers and Manuscripts relating to English Affairs Venetian. Vol. xxxvi. 1669–1670. London, 1937.

Calendar of State Papers. Domestic Series. William III., 1699–1700. London, 1937.

Calendar of Inquisitions. Miscellaneous (Chancery). Vol. iii. London, 1937.

Calendar of Treasury Books. 1703. Vol. xviii. London, 1936.

Close Rolls. Henry III., 1264–1268. London, 1937.

Calendar of the Fine Rolls. Vol. xvii. Henry VI., 1437–1445. London, 1937.

(2) By THE FIRST COMMISSIONER OF WORKS.

Ancient Monuments of Great Britain. List of Monuments (to 31st December 1936) prepared by the Commissioners of Works. London, 1937.

(3) By THE CLAN MACLEOD SOCIETY.

The Clan MacLeod Magazine, 1937.

(4) By R. FORRER, Musée Préhistorique et Gallo-Romain, Strasbourg. Palais Rohan.

Cahier d'Archéologie et d'Histoire d'Alsace. Anzeiger für elsässische Altertumskunde. Nos. 105–110. March 1937.

(5) By Commander G. E. P. How, R.N., F.S.A.Scot., the Author.

Catalogue of the Airthrey Renaissance Gold Globe Cup and other Objects of great importance. Originally the property of Donald Graham of Airthrey Castle, Bridge of Allan. London, 1937.

(6) By Lt.-Col. P. GORDON LOCH, C.I.E., F.S.A.Scot., the Author.

The Family of Loch. Edinburgh, 1934. Privately printed.

16 PROCEEDINGS OF THE SOCIETY, DECEMBER 13, 1937.

(7) By Sir GEORGE MACDONALD, K.C.B., LL.D., *President*.

Proceedings of the Devon Archaeological Exploration Society, 1935. Vol. ii., part 3. Exeter, 1936.

Archæological Reconnaissances in North-Western India and South-Eastern Iran, carried out and recorded with the Support of Harvard University and the British Museum by Sir Aurel Stein. London, 1937.

Saint Magnus Cathedral Octo-Centenary, 1937. Handbook. Kirkwall, 1937. And An Octo-Centenary Souvenir, 1137-1937.

(8) By D. P. MACLAGAN, F.S.A.Scot.

La Hougue de Déhus, Guernsey, Channel Islands. By Edith F. Carey and Miss V. C. C. Collum. n.p. 1933.

La Hougue Bie, Jersey. Société Jersiaise. 1933.

(9) By LÉON COUTIL, Hon. F.S.A.Scot., the Author.

Les Statues de Vierges à l'Enfant médiévales de l'Arrondissement des Andelys (Eure). Les Andelys, 1937.

(10) By THE BOARD OF TRUSTEES.

National Gallery, etc., Scotland. Thirtieth Report. 1936. Edinburgh, 1937.

(11) By THE COUNCIL OF THE ROYAL SCOTTISH ACADEMY.

One Hundred and Ninth Annual Report. Edinburgh, 1936.

(12) By W. PERCIVAL WESTELL, F.L.S., F.S.A.Scot., the Author.

Romano-British Pit Dwelling at Hawthorn Hill, Letchworth, Herts. Reprinted from *The St Albans and Hertfordshire Architectural and Archaeological Transactions*. 1936.

(13) By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the National Museum.

Catalogue of the Collection of Prehistoric Antiquities, etc., chiefly from Ireland, formed by W. J. Knowles, Esq., M.R.I.A. 1924.

The Curraghs of Ireland. By James Hornell. Reprinted from *The Mariner's Mirror*. Vol. xxiii., Nos. 1 and 2. 1937.

The Geology of the Coronation Stone. By C. F. Davidson. Reprinted from *The Transactions of the Perthshire Society of Natural Science*. Vol. ix., part vi. 1937.

- (14) By RICHARD QUICK, the Compiler.

What to see in and around Bournemouth, also Southern and Western England. Bournemouth, n.d.

- (15) By Lt.-Col. L. M. DAVIES (late R.A.), M.A., F.R.A.I., F.G.S.,
the Author.

The Geology of Inchkeith. Reprinted from *Transactions of the Royal Society of Edinburgh*. Vol. lviii., part iii. 1935-1936.

- (16) By THE DIRECTOR, National Galleries of Scotland.
National Gallery of Scotland. Illustrations. Edinburgh, 1937.

- (17) By The Most Hon. THE MARQUIS OF BUTE, K.T., F.S.A.Scot.
Court Book of the Regality of Broughton and the Burgh of the
Canongate, 1569-1573. Transcribed by Marguerite Wood, Ph.D.
Printed for private circulation. 1937.

- (18) By BEN B. MACKINNON, J.P., F.S.A.Scot.
Seven Pamphlets, etc., relating to the Clan MacKinnon Society.

- (19) By THE LIBRARIAN, University of Aberdeen.
Quatercentenary of the Death of Hector Boece, first Principal of
the University. Aberdeen, 1937.

- (20) By W. DOUGLAS SIMPSON, Esq., D.Litt., F.S.A.Scot.
Carnousie. Reprinted from *The Transactions of the Banffshire
Field Club*. July 1936.
Dunnottar Castle: Historical and Descriptive. Fourth Edition.
Aberdeen, 1937.

- (21) By THE DIRECTOR, Royal Scottish Museum.
Report on The Royal Scottish Museum. Edinburgh, for the Year 1936.
Edinburgh, 1937.

- (22) By THE TRUSTEES.
The Manx Museum and Ancient Monuments Trustees. Thirty-
Second Annual Report. Douglas, 1937.

- (23) By THE SECRETARY, Science Museum Advisory Council, Board
of Education.

Report of the Advisory Council for the Year 1936. London, 1937.
VOL. LXXII.

18 PROCEEDINGS OF THE SOCIETY, DECEMBER 13, 1937.

(24) By THE CLAN LINDSAY SOCIETY.

Report of Annual Meeting, with Bulletin. 1936.

(25) By Professor GERHARD BERSU, Hon. F.S.A.Scot., the Author.

Alzheimer Wohnhäuser vom Goldberg, OA. Neresheim, Württemberg.
Reprinted from *Germania*, Jahr. 21, Heft 3, Juli 1937.

(26) By JAMES CURLE, LL.D., F.S.A.Scot.

A History of Northumberland issued under the Direction of the
Northumberland County History Committee. Vols. i.-xiv. Newcastle-
upon-Tyne. 1893-1935.

(27) By DAVID COUPER THOMSON, J.P., D.L., F.S.A.Scot.

The Ladby Viking Ship, and Photograph. National Museum, Copen-
hagen. April, 1937.

(28) By Mrs WILSON, 4 Central Avenue, Cambuslang.

A Contribution to the History of Lanarkshire. By James Alexander
Wilson, O.B.E., M.D. Glasgow, 1937.

(29) By THE FALKIRK ARCHEOLOGICAL AND NATURAL HISTORY
SOCIETY.

Proceedings. 1935-36. Vol. i. Falkirk, 1937.

The following Purchases for the Museum were intimated: —

Model of the Stone Circle at Cullerlie, Echt, Aberdeenshire. Scale,
10 feet to $3\frac{3}{4}$ inches. (See *Proceedings*, vol. lxix. p. 215.)

Objects found at the Old Cattlefold, Vallay, North Uist—

Deerhorn.—Cylindrical Object showing marks of friction, as if
made by a cord, at one end, measuring $3\frac{1}{8}$ inches long; similar
Object, $1\frac{7}{8}$ inch long, perforated longitudinally; Object with
one end pointed, the other spatulate, well polished all over,
measuring $3\frac{9}{16}$ inches long; two pointed Tines, measuring
 $4\frac{1}{8}$ inches and $2\frac{1}{2}$ inches long; hollow Cylinder, measuring
 $1\frac{3}{4}$ inch long and $1\frac{1}{4}$ inch diameter; segment of Tine, dressed
on surface, with two holes begun at the ends, measuring
 $2\frac{5}{8}$ inches long; segment of Tine, undressed on the surface
and perforated longitudinally, measuring $1\frac{3}{16}$ inch long; two
pointed Splinters, measuring $2\frac{1}{8}$ inches and $1\frac{11}{16}$ inch long.

Bone.—Pin, measuring 3 inches long: pointed Splinters, measuring $1\frac{1}{2}$ inch and $1\frac{11}{16}$ inch long.

Of Bronze :

Hook attached to a quatrefoil plate, measuring $\frac{5}{8}$ inch square;
Pointed Object with curvilinear ornamentation on one side,
measuring $1\frac{1}{8}$ inch long; Point made by lapping over a
strip of metal, measuring $1\frac{3}{16}$ inch long.

Whorl made from a sherd of pottery, measuring $1\frac{1}{16}$ inch diameter.

Objects found at Bac Mhic Connain, Vallay, North Uist—

Bone :

Two Proximal ends of animal's femurs, both dressed, one
partly perforated on the under side, for making whorls or
heads of pins

Two Spear or Harpoon heads, measuring $4\frac{11}{16}$ inches and 4
inches in length, bored longitudinally to form the socket;
another with socket just begun, measuring $3\frac{11}{16}$ inches in
length.

Four Borers or Awls, measuring $3\frac{7}{8}$ inches, $2\frac{5}{8}$ inches, 3 inches,
and $2\frac{5}{8}$ inches in length.

Half of a Hammer of cetacean bone, measuring $1\frac{7}{16}$ inch long.

Deerhorn :

Part of a Tine, sharpened and cut, measuring $4\frac{1}{4}$ inches long.

Four Segments of antler, cut and partially dressed, measuring
 $2\frac{7}{8}$ inches, $2\frac{5}{16}$ inches, $2\frac{5}{16}$ inches, and $2\frac{9}{16}$ inches long.

Two Segments of antler, one pierced longitudinally, measuring
 $2\frac{1}{2}$ inches long, the other partially pierced from both
ends, measuring $2\frac{5}{8}$ inches long, probably for handles.

Cylindrical Segment of antler, deeply pierced from both ends
and nicely dressed, measuring $2\frac{1}{2}$ inches long.

Segment of antler with marks of friction encircling one end,
measuring $3\frac{1}{2}$ inches long.

Part of red deer's skull, showing the root of the burr of the
antler cut off.

Blade of Iron Knife with tang, measuring $3\frac{1}{2}$ inches long, very
badly corroded and split.

Half of a large Stone Adze, broken across the perforation, from
Carinish, N. Uist.

Wheel-geared Fire Blower of iron.

Cinerary Urn with a heavy overhanging rim (fig. 4), measuring $8\frac{7}{8}$ inches in height, $7\frac{1}{8}$ inches in diameter at the mouth, 8 inches at base of rim, and $3\frac{3}{8}$ inches across the base. The overhanging rim is decorated by irregular zigzags, with transverse lines between them forming a rude



Fig. 4. Cinerary Urn from Craigentunny.

pattern of alternate reversed triangles. Above and below is a single marginal line. The space between the overhanging rim and a slight cordon below being occupied by zigzag lines. On the top of the rim, which is sharply bevelled towards the inside, is a zigzag with a single marginal line above and below. All the designs are formed by impressions of a twisted cord. The urn was packed full of incinerated human remains and the fibrous rootlets of a plant which had filled up the spaces amongst the bones. Among the human bones was a pendant, formed from the leg-bone of an animal (fig. 5). On one side, near the narrow end, a perforation had been made by cutting a notch. It

measures $2\frac{3}{4}$ inches in length. Three calcined Flints (fig. 5), (1) a Scraper, measuring $\frac{15}{16}$ inch by $\frac{13}{16}$ inch, (2) another, measuring $\frac{5}{8}$ inch by $\frac{5}{8}$ inch, and (3) an unworked fragment; and Fragments of a Beaker Urn (fig. 6), of brown ware, the mouth measuring barely 4 inches in diameter, and the wall $\frac{1}{4}$ inch in thickness. The upper part of the wall is decorated by



Fig. 5. Bone Pendant and Worked Flints found in Cinerary Urn at Craigentenny. (1.)



Fig. 6. Fragments of a Beaker from Craigentenny.

a band of horizontal zigzags, placed $\frac{5}{8}$ inch below the rim, the rest of the wall above and below the horizontal band being covered by transverse lines closely set together, except for $\frac{3}{4}$ inch at the bottom which shows vertical lines: all are formed by rouletting. Found at Craigentenny, Edinburgh.

Large turned Wooden Bowl, measuring $17\frac{5}{8}$ inches in diameter at mouth and 8 inches in height, from Ardross Castle, Ross-shire.

Stone Hammer, measuring $3\frac{3}{4}$ inches by $\frac{3}{16}$ inch by $1\frac{5}{8}$ inch, made

22 PROCEEDINGS OF THE SOCIETY, DECEMBER 13, 1937.

from a waterworn pebble, the hole countersunk, and the ends slightly abraded by use, found on the surface of the ground at the foot of the Pentland Hills, at Swanston, Midlothian.

The following Purchases for the Library were intimated:—

The Place-Names of Shetland. By Jakob Jakobsen. London and Copenhagen, 1936.

Der Obergermanisch-Raetische Limes des Roemerreiches. Lieferung liv. Berlin and Leipzig, 1936.

The Leiths of Harthill. By Francis Bickley. London, 1937.

The Archæology of Sussex. By E. Cecil Curwen, M.A., M.B., B.Ch., F.S.A. London, 1937.

Viking Settlers in Greenland and their Descendants during Five Hundred Years. By Paul Nørland, Ph.D. London, 1936.

Haithabu, eine germanische Stadt der Frühzeit. By Herbert Jankuhn. Neumünster in Holstein, 1937.

The Anglo-Saxons in England. By Nils Aberg. Upsala, 1926.

Old English Drinking Glasses, their Chronology and Sequence. By Grant R. Francis, F.S.A. London, 1926.

Irish Free State National Monuments Act, 1930. Dublin, 1930.

Orkneyinga Saga. By Sigurdur Nordal. Copenhagen, 1913–16.

Stenalderbopladsen ved Klampenborg: Nogle Bidrag til Studiet af den Mesolitiske Periode. By Eric Westerby. Copenhagen, 1927.

Cassell's Old and New Edinburgh. By James Grant. 3 vols. London, 1882–1883.

Acta Archæologica. Vol. vii., Fasc. 2–3. Copenhagen, 1936. Vol. viii., Fasc. 1–2. 1937.

I.

THE VITRIFIED FORT AT RAHOY, MORVERN, ARGYLL. BY
PROFESSOR V. G. CHILDE, D.LITT., D.SC., F.S.A.Scot., AND
WALLACE THORNEYCROFT, F.S.A.Scot.

The vitrified fort of Rahoy is situated on the top of a small steep conical hill that rises some 200 feet above the level of Loch Teacuis. The fort is 830 yards west 5° north of Rahoy House and may be located by the formula $56^{\circ} 38' 24''$ N., $5^{\circ} 51' 48''$ W. It stands just opposite the narrowest point in Loch Teacuis and commands a view of the entrance to the loch from Loch Sunart on the north-west and the pass to Loch Aline on the south-east. The hill itself is formed by bands of the local psammitic schist lying on edge; the conical shape is due to the wearing away of dolerite dykes which have been intruded into the schist at various angles or by lines of weakness caused by "faults." The bands of schist vary in composition and hardness, and are often penetrated by veins of quartz. The bands in the vicinity of the fort are mostly siliceous and hard, but these alternate with softer bands containing more mica in thin layers. Owing to the alternation of hard and soft bands, the rocks on the hill-top have weathered very irregularly, causing the knobs, pinnacles, and sharp variations of level noted below. The banded structure also tends to make the blocks weathered or quarried off exposed faces cubical in shape, since the "backs" are more or less at right angles to the bedding planes. The weathering process is still going on actively on the steep slopes of the hill, which must have been much more nearly vertical when the fort was built. A granite boulder which has been transported by ice from the Strontian region was found on the summit.

The hill-top is surrounded with a bank enclosing a crater-like depression, roughly circular and measuring about 50 feet from crest to crest. Oaks and birches had been growing on the bank and within the crater, but had been felled before we arrived. The bank was still grass-grown save where Mrs Newton had made a cut through the bank on the west, exposing the vitrified core, which also projected through the turf at several points.

Excavations began on 2nd July 1936 and were continued till the

22nd: they were resumed on 17th June 1937 and ended on the 30th. In 1936 attacks were made on the rampart simultaneously from outside and from within the fort, the former operations being under the more special supervision of W. Thorneycroft, those in the interior of V. G. Childe. A line running north and south magnetic across the fort was used as a base for all operations (Plate I).

The Outer "Face" of the Rampart.—Cuts from the outside have been numbered in accordance with the figures on a clock dial, but XII is actually 4 feet east of base. In every section as the vitrified mass was approached many loose stones were encountered. Many of these were of considerable size and parallelopiped in shape so as to be suitable for use in dry stone building. Some were pinkish, others unaffected by heat. Almost everywhere the vitrified mass was markedly undercut at the edge. Black char was generally found on the rock under the overhanging edge. At III remains of a carbonised hazel stem, $3\frac{1}{2}$ inches thick, were lying in the black under the overhanging vitrified matter, and in a cleft of bed-rock at IV burnt animal bones were included in the black char. At I and V vitrified masses were actually welded on to the rock beneath. At IX the solid rock that here falls away steeply was observed to have been strongly heated some way down the slope. Underneath the outer vitrified mass (vitrified material extends further out than usual at this point, but a very distinct break was found by the section, 3 feet or so inwards from the outer face) a piece of solid micaceous schist, $\frac{1}{2}$ inch thick, came away welded to a lump of vitrified material, while the living schist's surface was "pimpled" by reason of fused mica having been extruded through a siliceous layer.

At XII it was possible to tunnel some 5 feet inwards under the vitrified mass up a natural cleft in bed-rock. The stones removed in tunnelling were comparatively loose though they had been heated. Excavation from the inside disclosed at the inner end of the cleft the mouth of a built culvert, and rain-water actually drained out along this channel during the excavations. The solid rock, both inside and out, had been heated and some pieces of fused stone were lying loose in the culvert. The black deposit found opposite the culvert's mouth inside the fort (p. 31) continued overlying the rock throughout our tunnel.

At X a section of dry stone walling, 4 feet long and about 15 inches high, was found below the vitrified face between two ridges of bed-rock (fig. 1). There was the usual black layer in front of the wall. The latter might have been built after the vitrification to underpin the mass where the loose stones, usually found below it, had been removed by some agency.

Section through Rampart.—The first operation conducted in the interior of the fort was to cut a section through the westward rampart along an axis at right angles to our base line. Starting at base line near the fort's centre, slabs of a pavement, with a deep black deposit over and between them, were exposed less than 1 foot beneath the turf. The pavement was followed westward for 8 feet from base line till an outcrop of bed-rock



Fig. 1. Segment of Outer Face at X.

came up to pavement level (198.75 O.D.). Stones, possibly fallen from the wall, began to appear here in abundance under the turf, and, 10 feet west of base, we first encountered an upper layer of black deposit (at 200 O.D. and 6 inches thick) which extended westward for 7 feet, gently rising (section Q-P). Stones mixed with brown or reddish sandy earth separated this "upper black" from the black deposit on the pavement and bed-rock. On the latter, stray burnt bones began to turn up amongst loose stones 12 feet from base line, and continued to be found for about 9 feet. At 16 feet from base the bed-rock, having risen to a boss at 199.2 O.D., suddenly dipped again about a foot, the cleft being filled with a deep black deposit. At 21 feet from base the stones of the bank were compact enough to stand as a more or less vertical face, which could not, however, be accepted as an actual built wall. As soon as

this dubious face had been removed, we were confronted by a solid vitrified face rising 3 feet above bed-rock.

The face was eventually cut through with dynamite and a sledge-hammer. The vitrified mass proved to extend for over $9\frac{1}{2}$ feet horizontally. Just below its outer edge a stone suitable for building was observed resting on bed-rock 32 feet from base. Beyond this point the rock sloped away steeply. In the section thus obtained the following points deserve particular attention.

Immediately outside the vitrified mass were the usual loose unheated stones of all sizes up to 1 foot square by 8 inches, but mostly smaller and mixed with sand, earth, and roots. Above the vitrified mass were smaller fragments consisting of all varieties of the local schist. Inside the fort large stones, some cracked with heat, were commonest below the level of the vitrified mass but near to it.

The mass of stones solidly fused together had a vertical thickness varying from 2 to 3 feet. Near the bottom of the mass, at least, the stones are small where not vitrified, the spaces between them being filled up with material that has been melted.










Near the outer edge of the mass and embedded low down in it were fragments of charcoal, apparently derived from a branch some 3 inches thick and 1 foot 8 inches long, lying horizontally at right angles to the line of the wall. Vitrified mineral had penetrated into the pores of this charcoal, forming a cast of the wood fibres and cellular structures. Similar casts of wood in vitrified material have been noted at Tap o' North, Finavon, and other vitrified forts. Our branch must have been heated to a high temperature in the absence of air to convert it into charcoal. The volatile organic matter and water have been distilled off and the spaces left on the branch's exterior have been more or less filled with molten mineral.

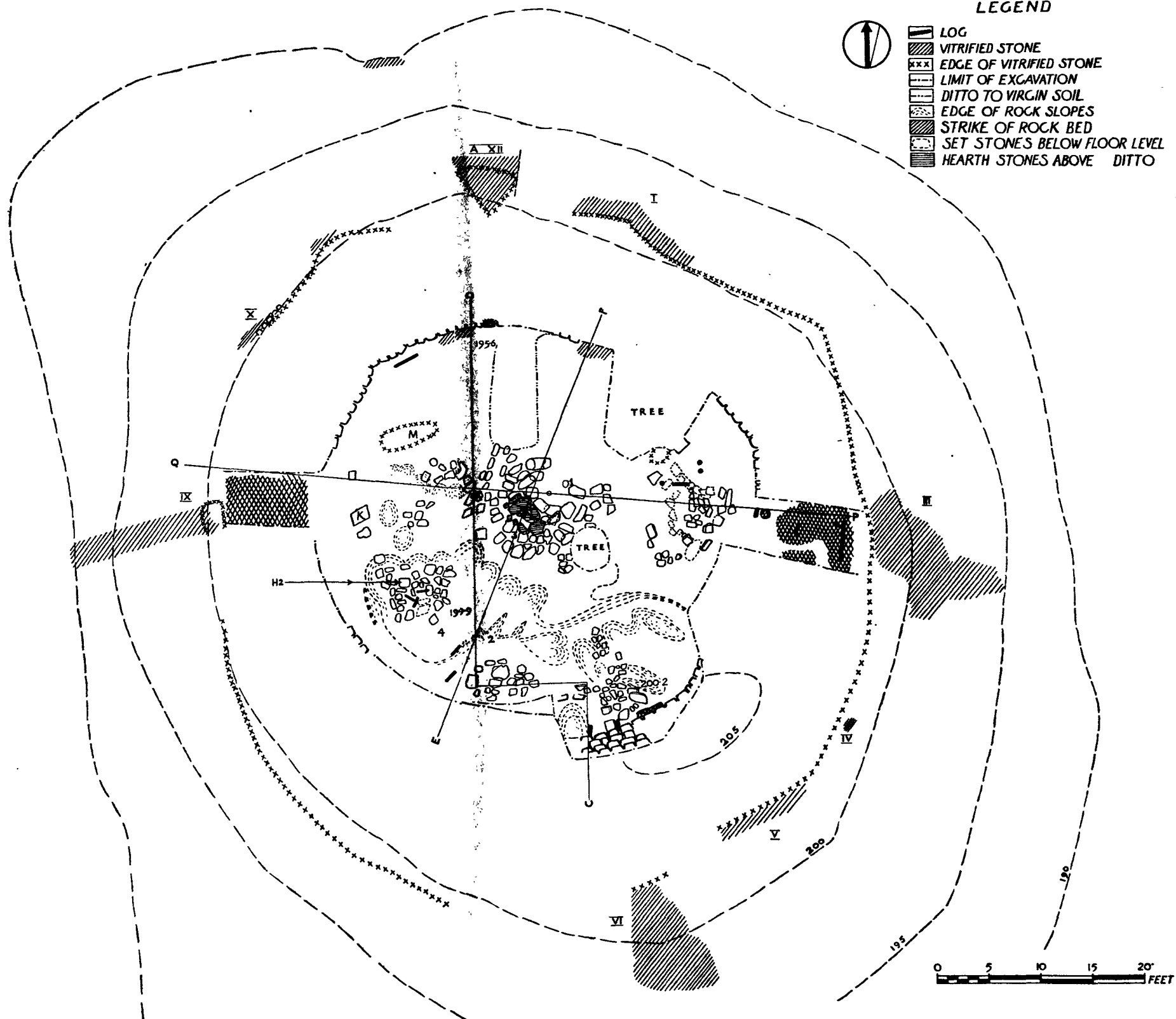
Below the vitrified mass the stones are loosely welded together near the top, and further down only cracked and discoloured by heat. The stones get larger towards the base of the underlying layer of unfused stones.

The bed-rock at the bottom had everywhere been slightly affected by heat. But throughout the section under the vitrified mass deposits of black material and burnt bones were observed in hollows of the rock.

In 1937 the rampart was cut through along the eastern extension of the same line, starting on the outside at the point numbered III, where the turf had already been removed in the previous year. Under the rampart's outer margin was a flat-topped boss of bed-rock, 199.2 feet above O.D. at 33 feet from O. Hence the rock sloped westward,

LEGEND

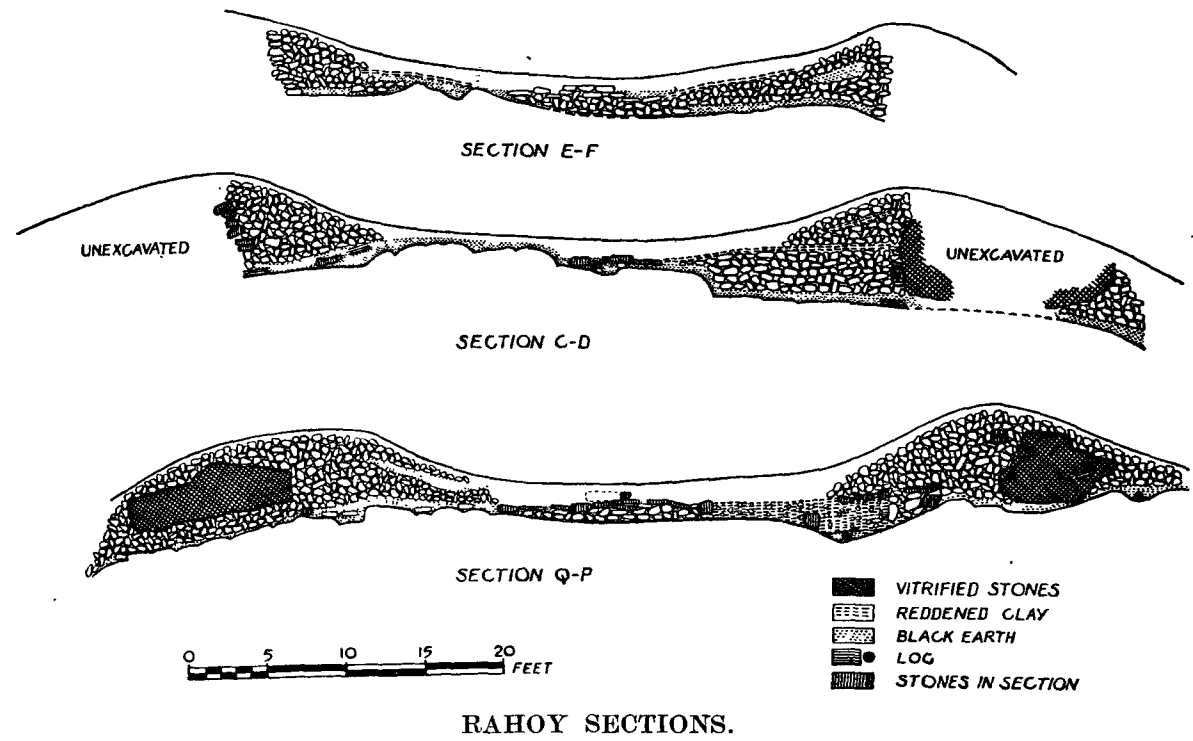
-  LOG
-  VITRIFIED STONE
-  EDGE OF VITRIFIED STONE
-  LIMIT OF EXCAVATION
-  DITTO TO VIRGIN SOIL
-  EDGE OF ROCK SLOPES
-  STRIKE OF ROCK BED
-  SET STONES BELOW FLOOR LEVEL
-  HEARTH STONES ABOVE DITTO



RAHOY PLAN.

PLATE I.

[To face page 26.



after an interruption at 30, down to 197·5 at 28 feet from O, but rose again to a narrow ridge, 198·4 feet above O.D. about 20 feet from O. Thereafter it sloped down again more steeply to 197·2, 17 feet from O. A solid vitrified mass was encountered first at 30 and was split off in sections. On the north wall of the cutting the mass of solidly fused stones was more or less continuous over a width 6·5 feet and attained a maximum thickness of 3·75 feet. On the south the mass was only about 3 feet wide and rather thinner than on the opposite side. The vitrified mass was deeply undercut near its outer edge, so that a foot of loose stones intervened between its under-surface and the rock, but 28 feet from O the lowest fused stones were barely 6 inches above bed-rock.

A thin layer of black material covered the rock all through the section and filled up depressions to a depth of 4 inches at 31 and 23 feet from O. In the black material a few scraps of burnt bone and charcoal were observed, and in the dip at 31 remains of a charred hazel stem, 3·5 inches thick, ran parallel to the rampart edge. In the body of the vitrified mass itself some 2 feet above the rock casts of horizontal beams, similar to that described in west cut but 4 or 5 inches thick, were detected 29·5 and 24·5 feet from O. Both stems ran parallel to the line of the wall, the first being clearly traceable for nearly 4 feet. Immediately below it the cast of a stouter beam, lying radially to the rampart and sloping down towards the interior, was observed, and is shown in fig. 2. Other less complete casts of timbers were also encountered in cutting through the mass, and in a few instances contained the friable remains of carbonised hazel wood. The wood was reduced almost to an amorphous powder, but by mounting it in paraffin Mr M. Y. Orr was able to recognise the vegetable structure under the microscope.

The vitrified mass ended, even on the north wall of the cut, east of the bank's present summit, 24 feet from O. West of this point only isolated vitrified stones were found in an accumulation of stones 6 feet high. Most of these stones were small, irregular, and cracked by heat, but 23·5 feet from O, two good building stones were included in the bank, 4 feet above the rock: they doubtless represent two courses from the inner face that had fallen outward. No built inner face was encountered though its anticipated line was approached from the interior that had already been excavated up to a point where the stones would stand almost vertical 18 feet from O. At this point paving-stones resting on a loose packing 199 feet above O.D. belonged definitely to the internal structure of the fort. Upon and below the pavers was a thick deposit of loose black material and very numerous burnt bones.

This deposit, over 9 inches thick, extended to the crest of the bed-rock ridge 19.5 feet from O. and then contracted quite abruptly and changed its character. It is possible that this contraction may mark the original line of the wall-base. A large block resting upon the sloping rock just beyond the outermost paver very likely belonged to a foundation course that had slipped a little down the declivity.



Fig. 2. Cast of Log in vitrified Mass.

The interior of the fort was excavated down to bed-rock by quadrants starting from the east-west section and working outward till a wall-face, or something like one, was encountered (save where oak-stumps were too deeply rooted to be removed without danger). It thus appeared that the original rocky peak enclosed by the rampart was extremely uneven. Obliquely across the south-west and south-east quadrants runs a narrow platform at an average height of 199.5 feet, but rising to bosses more than 200 feet above O.D. and interrupted by fissures. Many of the latter illustrate the differential erosion of the several kinds of schist, here lying on edge (the lines on the plan indicate the strike), but others, with smooth sides and a V-section, suggest quarrying. Within the enclosure the rock dips to the south-west, so that between the rampart and the platform there is an area lying nearly a foot below the latter.

To the north and north-east too the rock dips away in steps, first to a narrow irregular terrace about 198.7 above O.D. and then to an almost flat surface about 196 feet above O.D. This low platform drains through a culvert under the rampart into the natural crevice mentioned on p. 24 (section C-D).

The centre of the fort is occupied by the pavement resting on or



Fig. 3. Central Pavement and Hearth.

flush with the rock terrace (fig. 3) that we exposed almost immediately under the turf in the first section. The average surface level of the paving-slabs is 198.75 O.D., and they cover an irregular area some 14 feet across. The majority of the paving-stones are large slabs of micaceous schist only 2 to $2\frac{1}{2}$ inches thick, but solidier blocks, often flat on the upper side only, occur among them. The eastern edge of the pavement in particular was constituted by very stout blocks as much as 9 inches thick. Where the bed-rock slopes away under it, the pavement is supported by a packing of stones that is certainly deliberate and, along base line, attains a depth of 1 foot 4 inches. Between and under the paving-stones was a very black deposit extending down to solid rock. The same deposit with its top coming up to pavement level extended northward along base line, where paving-slabs were missing for 5 feet,

but no further. It is therefore integrally connected with the pavement. The black deposit included a very little burnt bone and considerable quantities of small charcoal, but no large timbers.

At or near the western edge of the paving the stumps of two posts of oak, still standing 3 or so inches high, were preserved in a damp corner between packing-stones. One post rested on a flat stone as footing, the other went down to bed-rock, though not into a well-defined socket. In the same region, about 8 feet west of base, a collection of larger stones vaguely suggested the ruins of a wall, but as its components were all loose above the black layer its direction and function cannot be defined. Immediately beyond the eastern edge of the pavement there was another large accumulation of substantial stones going down to bed-rock, but no order could be discerned among the stones, which were entangled with the roots of an oak tree.

In the centre of the slab pavement stands a raised hearth formed of heavy blocks, 4 inches or so thick, resting on the paving-slabs. As discovered there was a gap on the north-east side of the hearth. But the stone flanking this on the east, which was quite loose and undermined by oak roots, would conveniently fill the vacant space. If this stone had been displaced by roots from the gap, the original hearth would have been roughly rectangular like those found at Finavon. The big hearth stones were cracked and reddened by heat. South of them an irregular heap of blocks, including a broken saddle quern, lay piled upon the pavement, but represented, if anything, a backing to, rather than a continuation of, the hearth.

The limits of the pavement are regrettably vague, and beyond them neither floors nor constructions could be recognised with complete certainty. In clearing the north-west quadrant we reached, below debris fallen from the walls (including a band of upper black that began generally 10 to 12 feet from our centre), at the level of the pavement a brown layer of compacted earth and small stones. This "floor," at first flush with the pavement, sloped up towards the periphery to 200 feet above O.D. Stones and debris generally came away easily from its surface, but the big mass of vitrified material, marked M on the plan, was embedded in it; very few burnt bones were encountered above the "floor." It sounded quite hollow, and the removal of a stone from it exposed a gaping cavity. The excavation was pushed on at this level, till, about 18 to 19 feet from the centre, the loose rubble fell away from a sort of wall-face, very irregular and coursed only for short segments, but sufficiently solid to stand nearly vertical (fig. 4). It proved to approximate to the contour of a circle with diameter 40 to 45 feet.

Under the "floor" was a cavity going down to the low platform. The space between the floor and the gently sloping rock-surface was filled with large angular fragments of local rock, many reddened by heat. There was very little earth between them, but fragments of burnt animal bones were found at all levels between the blocks of rock. The large masses of vitrified material, M. went down below the "floor"



Fig. 4. Inner Face in north-west Quadrant and Culvert (right).

level, and at one point bits of burnt bone were fused on to their under-side. Small pieces of vitrified matter were found only a few inches above bed-rock. The rock-surface itself was covered with a thin black layer, which comprised hardly any bone, but some substantial pieces of carbonised wood.

The coursed masonry of the wall-face previously exposed did not go down to the rock-surface, but the lintel of the culvert, already mentioned, fitted roughly on to the same circle as the segments previously exposed. The lintel, a flat slab about 1 foot long, was tilted, and at its centre about 18 inches above the sloping rock. It supported two building stones fused together (fig. 4. and section C-D).

In the south-west quadrant the rock rises quickly beyond the edges of the pavement to the high platform. Its flat surface was covered

with black material and the remains of charred wood. Under these the unevennesses of the rock had been bridged over with flat slabs. Among these the cracked slabs marked H2 had evidently been the site of a hearth. Near them a bed of charred bracken stems was resting on the pavement, while above the black layer was a deposit of reddish rather sandy material mixed with stones.

Over the hollow platform to the south the same sort of "floor" deposit as that described in the north-west continued at about 200 feet above O.D. But under it was a dense black layer comprising many carbonised logs. The hollow itself was partly filled by large irregular blocks set flat face up and roughly horizontal 199.65 feet above O.D. They resemble paving-stones, but are set so far apart as to look more like stepping-stones: they would serve admirably as supports for beams. The series of stones continues on into the south-east quadrant, into which the hollow extends (see section E-F).

In both quadrants about 20.5 feet from O the wall debris could be left standing as a nearly vertical face some 5 feet high. Though charred material and burnt bones continued under this "wall," it was accepted as the true inner face of the rampart in the south-west quadrant. In the south-east quadrant, however, excavation was pushed further out and disclosed behind this false face the segments of unmistakably coursed masonry walling described below.

In the south-east quadrant the rock platform was partially paved with small slabs as in the south-west. Similar small paving-slabs continued over the edge of the slope down northward from the platform, but the slabs here were tilted with charred timbers between and under them. Further north and in the north-east quadrant a hollow "floor" deposit similar to that noted in the north-west continued the level of the central pavement. Here, 2 feet north of axis and 8 feet east of base, a large cracked slab at floor-level looked like a hearth; burnt bones lying all around at pavement-level afforded further evidence of occupation on the "floor." Nearby another large mass of vitrified material was embedded in the floor. From 10 to 15 feet east of base the floor was bright red instead of being brown. Just south of our axis was a line of paving-slabs some 3 feet wide extending from 13 feet east of O to the supposed line of the wall-face, which had here totally collapsed (fig. 5). This paving was obviously hollow, as earth trickled down any gap between the slabs.

On raising the paving-slabs and the red "floor" a hollow space was exposed bounded on the north-east by a built wall that crossed our axis 13.5 feet from O, but could not be traced as far as the line of

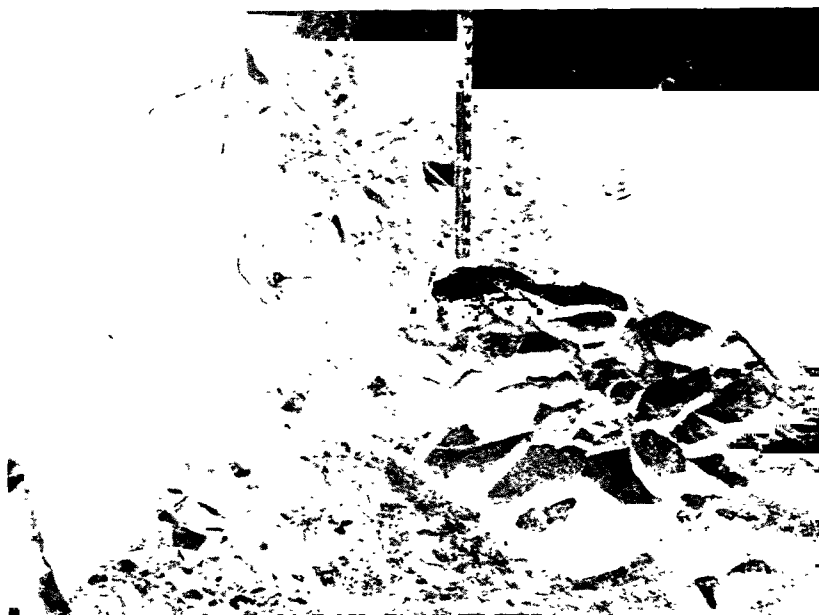


Fig. 5. Paving over "Cellar."



Fig. 6. "Cellar" after removing Pavement.

rampart. This wall (fig. 6) stood three courses high, and was composed of flat slabs measuring between 18 by 6 by 12 and 15 by 7 by 9 inches and resting on bed-rock at 196·3. From the wall's base the rock floor slopes up towards the south-west, and after 1·5 to 3 feet reaches the base of a not quite continuous line of solid blocks that may be treated as the south-west boundary of the hollow structure.

Towards its south-eastern end this hollow contained only loose black earth and stones though the "floor" above it was red; westward, as far as 13 feet east of O, the whole cavity was filled with red earth and the stones of its "walls" gave the impression of having been intensely heated. The rock floor of the cavity was, however, covered throughout only with a thin layer of black earth in which carbonised logs were preserved. This ruinous structure is reminiscent of a cellar or oven, since its rock bottom was 2 feet below the level of the pavement and the supposed "floor" that continues it.

Beyond the north-east wall of the "cellar" no structures were found until we reached the inner face of the rampart, four courses of which, resting on bed-rock, were exposed here. In this corner bed-rock reached the lowest level uncovered within the fort, 195·6 feet above O.D. The moisture accumulated in this hollow had preserved two stout oak posts, 6 inches in diameter, that had once been standing erect on the rock.

CONCLUSIONS: THE WALL.

The Inner Wall-face.—The many barrow-loads of fallen stones banked up against the rampart inside the fort led the excavators to expect a well-built face within the vitrified core, such as had been exposed at Finavon. But only the ghost of such a wall survived. In 1936 we discovered in the north-west quadrant a culvert with two courses of masonry above the lintel. These stones were vitrified, but no additional courses of masonry were recognisable above them; the lintel itself on which they rested was tilted and supported by extremely rude building. East of the culvert the wall had obviously collapsed, but west of it we exposed a few short segments in which two or three slabs still retained their relative positions as wall courses. But these segments lacked any solid foundation. The section seen to the left in fig. 4 is resting loosely on the supposed "floor" at 199 feet O.D.; below it there was no sort of coursed masonry, though it kept its position fairly well when we dug down to bed-rock, almost vertically below, at 196 feet. A carbonised log was lying on the rock parallel to the wall-face almost beneath it. In the south-west quadrant we accepted as wall-footings

angular blocks planted firmly on bed-rock, above which the mass of stones would stand almost vertically although no coursed masonry, and indeed no suitable building stones, were included in the "faces" thus obtained.

It was not till 1937 that we discovered a really convincing section of wall. Then in the south-east quadrant, after removing some false



Fig. 7. Inner face in south-east Quadrant.

faces and rejecting some angular "footings," we reached a relatively long continuous segment of quite recognisable building. Over an arc of chord 15 feet two and sometimes three courses were in place 1.5 to 2.75 feet above the rock (section C-D). For a shorter distance four or five courses above the foregoing were also preserved (fig. 7) (they were found only when we were sloping off the bank for safety at the end of the excavation). But these additional courses were tilted bodily outwards: while they added only 2 feet to the vertical height of the wall, they would, if bent back to the vertical, have stood 2.5 feet straight up since the topmost course was no less than 1.5 feet back from the line of the perpendicular to the bottom course. The masonry of this section was composed mainly of long flat slabs 13 to 17 inches in length and 4 to 5 inches thick.

While this segment of wall really preserved the effect of its original

curvature, it cannot be regarded as actually *in situ*. Below the courses of long slabs are only loose and irregular stones, save at one point where a lower course was noted; at the same point the two lowest surviving courses are vitrified. Nowhere was a genuine foundation course solidly based on bed-rock discovered, but at two points radial beams could be seen running in under the building, while everywhere black earth and

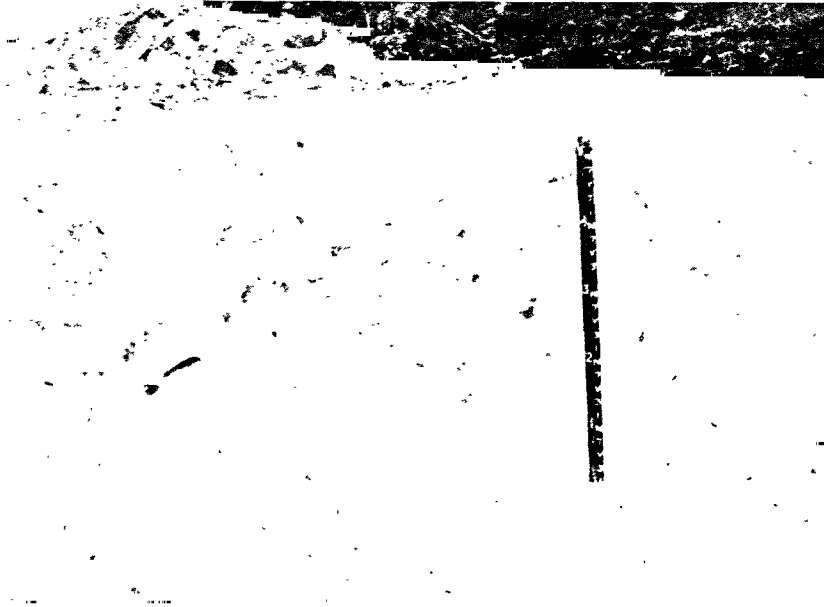


Fig. 8. Inner face in north-east Quadrant

charred wood lie under the stones that now support the masonry. Evidently the wall had fallen outward until the surviving courses came to rest leaning against the rubble of the core.

Where the rock slopes down from the high platform, the mass seems to have slid forwards; more or less continuous courses of building slabs, apparently corresponding to those preserved in the segment described, appear 1.5 to 2.5 feet in front of the positions they would be expected to occupy in a continuation of the curve just traced, but here more obviously insecure and out of place.

The true line of the wall was, however, recovered in the north-east quadrant. Here discontinuous strips of wall stand four or five courses high and resting directly on the rock at about 196 feet above O.D. under what appeared from the surface to be the lowest section of the rampart where the fort's entrance might have been expected (fig. 8).

The foregoing observations prove that the rampart was in fact once faced on the inside with a built wall composed in part of coursed masonry. But the surviving segments of this masonry are everywhere distorted, the successive courses fit only very loosely together, stable foundations are missing. If it be assumed that the rampart was actually composed of stone and timber on the *muris gallicus* principle, the observed phenomena become intelligible. The decay or combustion of the transverse tie beams will account for the yawning gaps between the building stones as well as for part of the distortion. The absence of a foundation course is explicable if the wall rested on a raft of timbers as did that of Burghead. The black material and charred timbers found in front of, and even running under, the wall afford some justification for assuming such a wooden substructure. Finally, the combustion of the wall timbers could explain the vitrification of the core in accordance with the suggestion of Déchelette confirmed by our own experiments.

No solid face of vitrified stone was discovered within the area bounded by the wall just described. Isolated masses of stones fused together were indeed found in the interior. Many of these lay high up among the stones fallen from the rampart and had clearly themselves tumbled inwards. But several masses lay on or were embedded in the supposed floor. In the north-west quadrant a particularly large mass composed of contiguous, but no longer continuous, blocks of fused stones extended for over 7 feet at M on the plan. At its eastern end it seemed to be resting on, or protruding from, the "floor" at 198.6 feet O.D., but further west it was traced below the crust though it did not touch bed-rock. At this level burnt bones were fused on to its under side. As burnt bones were found scattered about at all levels below the "floor," this observation may indicate that the mass fell in among the stones and bones while still in a molten state. Alternatively, since there are other traces of bones adhering to vitrified material even in the core of the rampart, bones may have been included in the rubble filling of the hypothetical Gallic wall and actually served as additional fuel for its vitrification.

Within the wall-core behind the face the vitrified masses observed *in situ* were nowhere more than 3 or 4 feet deep. While in the west section a single mass extended continuously over a width of 9 feet, the maximum width observed in the east section was only 6.5 feet. And here the superficial area of solidly fused stones was seen to be limited by lateral breaks. In other words, a continuous vitrified core to the rampart is only an assumption not fully supported by observations.

Nowhere in either section did the vitrified mass rest on bed-rock, though places have been described already where the vitrified material is actually fused on to the rock. On the other hand, black material was found in patches or continuously all along both sections under the vitrified stones. It might be derived from the combustion of the timber substructure of our Gallic wall. The casts of horizontal timbers, so clearly defined in the east section, are conclusive evidence for the former existence of beams within the wall-core arranged much in the way attested by excavation in the Gallic wall at Burghead and described by Cæsar in Gaul.

Admittedly a *murus gallicus* should have a coursed outer face at least as well built as the inner face, but in this case, the wall being built in a circle, the expansion of the stones caused by the heat during vitrification would thrust outwards and naturally destroy the outer face, whereas the inner face, being backed by the mass of the wall, although crushed and distorted, would tend to survive. The only trace of such a face at Rahoy is the rather miserable little segment at X on the north-west. Elsewhere no outer face whatsoever survived. Nevertheless plenty of stones suitable for facing a wall were encountered in all external cuts. Accepting the segment of outer face exposed at X as marking the outer margin, the rampart will have had a thickness of 10 feet, or 12 feet if the corresponding inner face be supposed to have slipped outward. Owing to the immense distortion of the face the diameter of the enclosure can be estimated only within limits of 4 to 5 feet; 42 ± 2 is as near as we can get to the internal width. In all probability the wall was intended to be a true circle. Certainly, as at Finavon, no attempt has been made to adjust it to natural contours.

THE RELICS.

Although the whole interior of the fort was excavated to bed-rock by trowelling, the number of relics recovered was very meagre. Pottery and bone implements were totally absent. Pottery was certainly not made by the fort's occupants, presumably owing to the lack of deposits of suitable clay in the vicinity. Doubtless wooden vessels took the place of pots. The soil conditions are such that no unburnt bone survives. The relics recovered are listed below, the find spots being indicated by the corresponding numbers on the plan.

(1) Small scraper made from a broken pebble of flint, obtainable locally from the cretaceous limestone deposits surviving on the hill-tops—found in the black deposit between the slabs of the pavement.

(3) and (6) Broken saddle querns, one lying immediately south of the central hearth, the other among loose stones presumed to have fallen from the rampart, *above* the red and lower black layers in the south-west quadrant. Saddle querns alone were found in the vitrified fort at Duntroon, Crinan.

(4) Looped and socketed iron axe-head found lying in charred

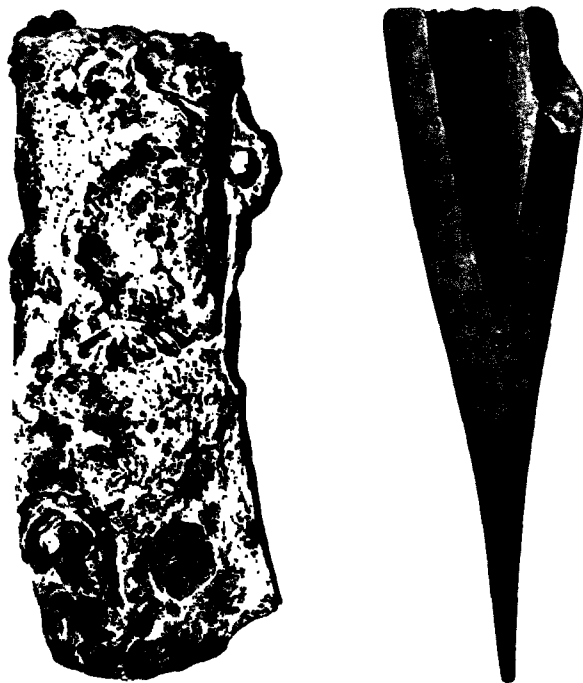


Fig. 9. Socketed Iron Axe from Rahoy. ($\frac{1}{2}$.)

material on the rock in south-west quadrant; a length of charred oak, plotted before the discovery of the implement, pointed to the find spot, and may have been the handle, but was too much disintegrated to reveal any shaping. The axe is 7.12 inches long and 2.6 inches wide at the blade. The loop seems to be .8 inch wide but is much corroded (fig. 9). Our axe makes the twelfth and largest extant specimen of a rare British type discussed by Rainbow in *Archæological Journal*, vol. lxxxv, 1928, pp. 85 f. Like six of the other examples the implement is asymmetrical: the cutting edge droops or broadens downward as in Rainbow's group B. "The transitional character of the technique of these axes carries," writes Rainbow, "with it a general application as to their date in the

transition period between the Bronze and Early Iron Ages." But no specimen is more precisely dated than ours. Fortunately the early fibula found at Rahoy confirms the inference from the implement's obvious resemblance to a cast bronze "socketed celt." In view of the doubts as to the method of manufacture provoked by this similarity we submitted the specimen to Dr C. H. Desch, F.R.S. His report,

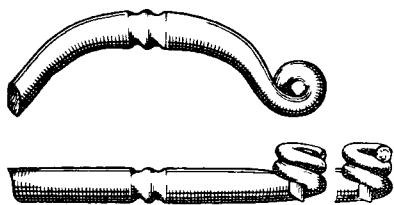


Fig. 10. Bronze Fibula. (½.)

printed below, proves that the implement has in fact been forged, not cast. A duplicate which we had forged in iron weighed 4 lbs.

(2) Part of the bow and spring of a bronze fibula. The foot is unfortunately missing, as is half the spring, which was, however, evidently bilateral (fig. 10.) Enough remains to show that the brooch belongs to the La Tène series and probably to a rather late version of the La Tène I type. The closest parallel is the (also imperfect) brooch from the Gallic-walled fort above Abernethy. Outside Scotland better analogies are to be found in Switzerland than in Britain.

Few though the relics be, they are of a nature to furnish information on two of the most important issues raised by the representative vitrified fort. On the question of dating, the exclusive use of saddle querns and the iron imitation of a bronze axe both suggest some time in the pre-Roman Iron Age. The brooch justifies more precision, and with all reserve a figure shortly after 200 B.C. might be hazarded. Rahoy thus strengthens the evidence from Dunagoil and Duntroon for a La Tène Age for vitrified forts north of the Clyde-Forth line as suggested in the *Prehistory of Scotland*. Still more explicitly do the relics support the theory of a cultural community between the vitrified and Gallic-walled forts which have been provisionally grouped together as the Abernethy Complex. In any case, the typological parallelism between the fibulae from Rahoy and from Abernethy establishes the general contemporaneity of a vitrified with a Gallic-walled fort.

Acknowledgments.—We are indebted to Mrs Newton of Rahoy for permission to excavate the monument, for kind hospitality and much practical assistance during the excavation, and for presenting the relics to the National Museum. The success of the excavation is largely due to the skilled co-operation of Mr J. I. Sutherland, who, as foreman during both seasons, gave us the benefit of his four years' experience in archaeological

excavation, and of Mr Keith Webster of Dalrulzion. Dr J. B. Simpson, who was conducting field work in the district, very kindly came to our aid in the solution of geological problems. We have also to thank Dr C. H. Desch of the National Physical Laboratory for examining the axe, and Mr M. Y. Orr of the Royal Botanic Gardens for identifying the charcoal and carbonised wood.

Mr Orr's examinations of the portions of carbonised wood submitted to him show a predominance of oak followed by hazel, with a smaller amount of willow or poplar and birch and a very little elm. The post stumps found near the hearth and in the north-east quadrant were of oak. The stem found under the outer edge of the vitrified material at III and the very friable charcoal enclosed in the vitrified core proved to be hazel. Only in the case of a minority of the specimens, and these all of oak, does Mr Orr add "condition suggests burning."

REPORT ON THE AXE. By Dr CECIL H. DESCH, F.R.S.

The iron axe was cut in half and one section ground, polished, and etched. The three photographs show its structure. Fig. 11 is the cross-section after light etching, slightly enlarged. The dark border



Fig. 11. Cross-section of Axe slightly enlarged.

and bands are the corrosion product—rust which has crystallised in course of time. The white is iron, and the grey portions are iron containing enough carbon to make it steely. Fig. 12 shows, at 150 diameters, large crystals of nearly pure iron, with inclusions of dark cinder (slag). Fig. 13, also at 150 diameters, shows a part containing much more carbon, about 0.3 per cent. Some parts had still more carbon.

The structure is that of a bloomery iron of remarkably good quality.



Fig. 12. Section of Axe. ($\times 150$.)

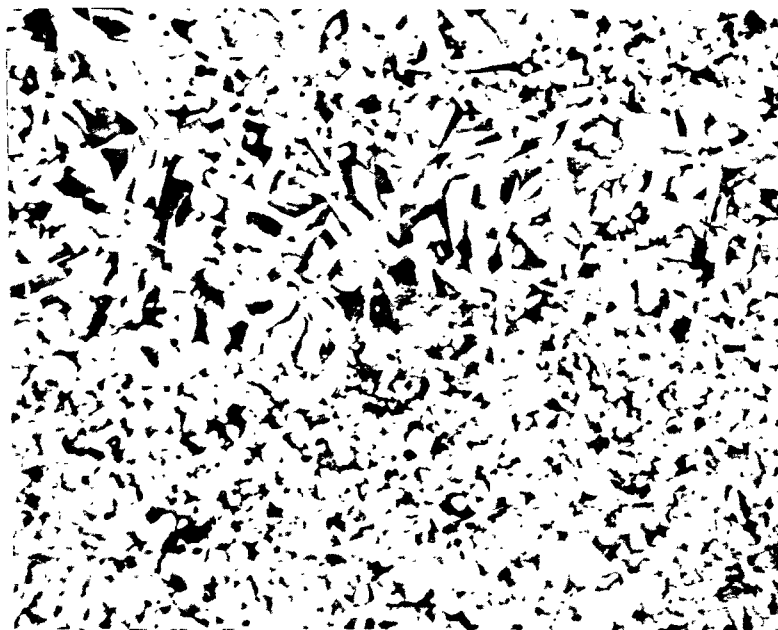


Fig. 13. Section of Axe. ($\times 150$.)

The variation in carbon is usual, but I have examined few bloomery irons which are so clean and well forged. The bands extending right across the greatest width of the axe show that welding was imperfect, which is to be expected in the absence of a power hammer, but it is remarkable that pieces of iron so large should have been united so well, with presumably only hand hammers.

The preservation of the specimen is remarkable; the faces have only a thin layer of rust, and it is only on one edge that extensive rusting has occurred.

II.

THE EXPERIMENTAL PRODUCTION OF THE PHENOMENA
DISTINCTIVE OF VITRIFIED FORTS. BY PROFESSOR
V. G. CHILDE, D.LITT., D.SC., F.S.A.SCOT., AND WALLACE
THORNEYCROFT, F.S.A.SCOT.

Vitrified forts have so often figured in the *Proceedings* that any comprehensive description is now superfluous. We must, however, recall certain features in order to explain the considerations guiding our experiments and to show how far these were successful. We apply the epithet "vitrified" to those forts—in Scotland or abroad—that comprise within their ramparts broken stones fused together to form a solid mass. The extent of such vitrification varies enormously from site to site. The most famous Scottish examples, perhaps not more than twenty in all, at least superficially give the impression that a substantial wall of vitrified matter once ran more or less continuously round the whole perimeter of the enclosure or at least extended over substantial strips. In others, on the contrary (*e.g.* Dundear-dail, Ord of Kessock, Trudernish Pt., Harelaw), it is necessary to hunt about to find even two or three stones fused together.

In quite a number of instances inspection or excavation reveals built masonry wall-faces inside (Rahoy¹); outside (Duntroon,² Carradale, Torr Duin,³ Lochan Gour,⁴ Dundee Law); or on both sides of the vitrified rampart (Finavon,⁵ Dundear-dail, Eilean Buidhe,⁶ Duna-goil⁷): such faces are frequently so dilapidated and distorted that they are liable to be missed by old-fashioned methods of excavation. The vitrified masses are always heavily undercut. Neither at Finavon nor at Tap o' Noth⁸ were they ever found *in situ* resting on bed-rock. In Inverness-shire, according to Col. M'Hardy,⁹ there is generally a layer of loose stones on virgin soil below the vitrified masses, and such a layer was observed in some sections at Rahoy and Duntroon. But at Rahoy we

¹ *Proc. Soc. Ant. Scot.*, vol. lxxii, p. 35.

² *Ibid.*, vol. xxxix, p. 275.

³ *Ibid.*, vol. xl, p. 140.

⁴ *Ibid.*, vol. xliii, p. 35.

⁵ *Ibid.*, vol. lxix, p. 51.

⁶ J. Harrison Maxwell in *The Buteman*, February 5, 1937.

⁷ *Trans. Bute Nat. Hist. Soc.*, 1925, p. 60.

⁸ Jas. Macdonald in *Huntly Field Club, Local Place Names*, 1887, vol. v, p. 25.

⁹ *Proc. Soc. Ant. Scot.*, vol. xl, p. 37.

found masses fused on to bed-rock at two points, and at Duntroon "the vitrified masses generally stood on solid rock." In a general way the loose stones in the ramparts of vitrified forts seem to be smaller than the rubble filling between the faces of brochs and dùns. The rocks known to have been vitrified include Old Red Sandstones and the Conglomerates of that series (Finavon, Craig Phadrig, Ord of Kessock, Cnoc Farril), Diorite (Tap o' Noth), Epidiorite (Duntroon), Moine Schist (Goat Isl.) and other varieties of schist—all rocks that contain a relatively high proportion of minerals other than quartz.

In the vitrified forts that have been scientifically excavated and adequately described,¹ a fierce conflagration within the fort is attested both by traces on the sub-soil and by an astonishing number of carbonized logs lying under the debris of the ramparts. At Finavon the charred timbers lay upon and above the hearths and floors of houses built under the shelter of the north rampart; at Rahoy they lay upon the rock floor round hearth H2. The pieces of wood in question cannot therefore have been burned in any vitrification process preparatory to the occupation of the fortified enclosure. Moreover, both at Eilean Buidhe and at Rahoy, charred material extended under the foundations of the walls.

In the vitrified masses themselves we regard the following observations as particularly significant: (1) some stones have been completely fused and run in the molten state forming what we term "drops"; (2) we have frequently found casts of pieces of timber enclosed in the vitrified masses and exactly similar casts have been reported in vitrified forts in France²; (3) more rarely small pieces of completely carbonized wood are included in the vitrified masses.

We have no intention of traversing here the numerous theories that have been proposed to account for the foregoing phenomena. On the Continent the most authoritative explanation is that of Schuchhardt accepted by Déchelette,³ and subsequently supported by the masterly excavations of Bersu.⁴ These authors maintain that vitrification results from the combustion of the wood in a wall composed of stone and timber built in the manner of Cæsar's *muris gallicis* and illustrated in Scotland by the ramparts of Burghead, Castlelaw, Abernethy, and Castlelaw, Forgardenny. This hypothesis not only offers an intrinsically plausible

¹ Duntroon (*Proc. Soc. Ant. Scot.*, vol. xxxix. p. 282), Finavon, Rahoy.

² Fort de la Courbe, near Argentan, Orne; Puy de Gaudy, Creuse and Chateau Meignan, Mayenne (*Revue archéol.*, vol. xli. (1881), p. 19; vol. xliii. (1882), p. 275); Camp de Péran, Côtes du Nord (photographs and information kindly supplied by Dr R. E. M. Wheeler, F.S.A.), Gourdon (Déchelette, *Manuel d'archéologie préhistorique*, ii. 2, p. 705).

³ *Op. cit.*, pp. 707 ff.

⁴ Cf. especially *Der Breitenburg bei Stregau*.

account of the production of a vitrified rampart, it would also explain some of the specific phenomena noted above, viz., the casts of timbers in the ramparts, the presence of charred material below them, the existence of built wall-faces in an extremely dilapidated state, the relatively high proportion of small stones.¹ One of us² has, moreover, drawn attention to a similarity between the relics recovered from *murus gallicus* and vitrified forts in Scotland. The excavation at Rahoy has enhanced the impression of similarity. In any case the fibula from this vitrified fort stands typologically so close to that from the Gallic-walled fort at Abernethy that the two forts must be assigned to the same archæological period. At the same time the character of the broch establishes the use of the *murus gallicus* technique as early as La Tène I. in Scotland and *a fortiori* on the Continent, too, since the Gallic-walled forts at the mouth of the Tay obviously belong to an intrusive complex. This dating removes a difficulty felt by Déchelette, who notes that the Gallic-walled forts of France are essentially La Tène III. while the vitrified forts seem earlier. Incidentally the technique employed in these later examples seems more advanced than that illustrated at Abernethy and Forgan-denny where, for instance, the use of iron clamps for the timbers³ was not observed. It may be due to such technical improvements that Cæsar was unable to set these walls on fire (in La Tène III. times). We, however, entertained doubts whether the combustion of such a wall would generate a temperature between 800° C. and 1100° C. such as we had found necessary to melt the stones employed at Rahoy and Finavon. We accordingly designed experiments to test the theory.

1. At Plean Colliery, Stirlingshire, a model *murus gallicus* 12 feet long by 6 feet wide by 6 feet high was erected to our specifications under the continuous personal supervision of Mr Daniel Wright, then coke-oven manager (fig. 1). Old fireclay bricks were used for the faces and arched bricks were included in the foundation course, needed to level up the slope of the ground, to simulate the vent holes that rock fissures would provide on actual Scottish sites. A raft of closely set transverse timbers (pit-props) of 5 inches diameter was laid down resting on the earth at one end on the foundation course at the other (termed the inner face). The outer face rested on the earth, the inner mainly on the timber raft, in accordance with the arrangement described in the *murus gallicus* fort at Burghead. A layer of pit-props and smaller timbers, parallel to

¹ We were much impressed by the value of small angular rubble in stabilizing the woodwork by preventing logs from rolling.

² V. G. Childe, *Prehistory of Scotland*, p. 236.

³ Déchelette insists on the failure to find such clamps in the French vitrified forts that had been excavated.

the faces, rested directly on the raft. The two faces were tied together with four layers of pit-props set at intervals of 16 inches vertically and horizontally. Each layer of tie-beams carried a layer of longitudinal pit-props and smaller timbers lying parallel to the wall-faces. Especially

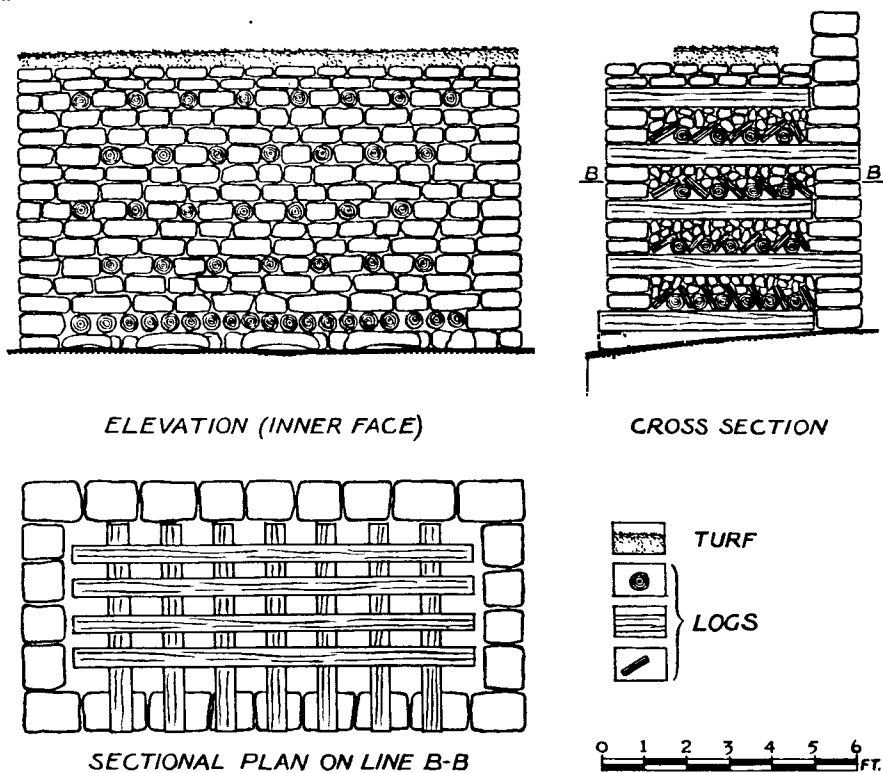


Fig. 1. Plan: The Model Wall.

in the upper layers additional half-round timbers had to be nailed across the longitudinal timbers to stabilize the structure. The space between the faces was filled with basalt (whinstone) rubble, broken to size of 1.5 to 2 inches cube. The mass was covered at the top with a turf blanket that did not, however, come up quite to the edge of either face. The ends were bricked up solidly save for an opening 2 feet square at the base of one end. Care was taken that the fire bricks did not fit more closely than would the flat stones of a dry stone wall. About 1 ton of pit-props, and 6 cwt. scrap timber, both *dry*, were built into the wall, while the rubble weighed 7 tons 7 cwt. (fig. 2).

To ignite the wall, scrap timber and brushwood were heaped around

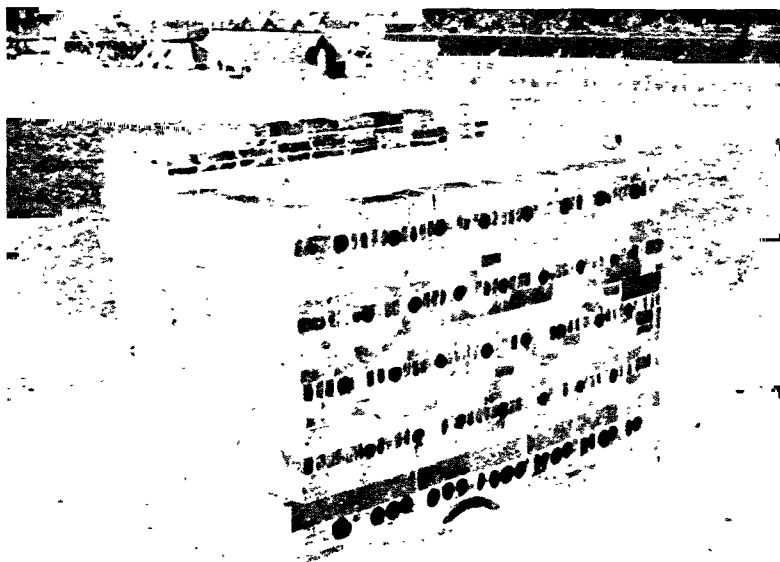


Fig. 2. Plean: The Model Wall completed.



Fig. 3. Plean: The Model Wall burning.

it 6 feet high and 3 feet thick, about 4 tons being used. The fire was kindled at 11 a.m. on March 11 in a snowstorm, the wind blowing from the east with a velocity of 15 m.p.h. at noon and 25 m.p.h. later. The whole of the timber was ablaze within half an hour. When the timbers in the upper layers had burned one hour, the basalt could be heard falling to the layers below. The spaces between the fireclay bricks increased

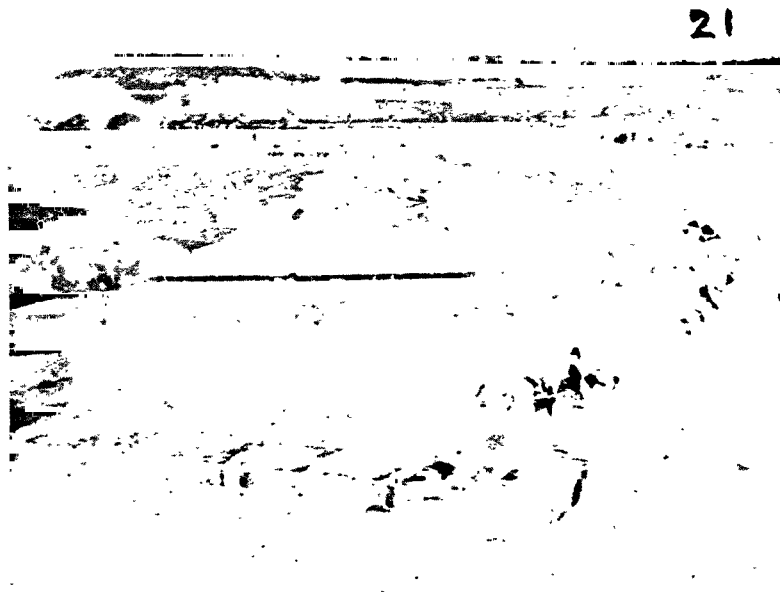


Fig. 4. Plean: The Vitrified Core.

(fig. 3) and the faces became increasingly unstable till, 3 hours after kindling, the entire outer face collapsed, followed by the collapse of the east end and two-thirds of the inner face. The collapse of the surrounding wall allowed the wind to play upon the upper layers of basalt and cool it, but the rubble in the centre of the wall that had found its natural angle of repose between the collapsed faces continued to get hotter and hotter until it was a glowing red mass, attaining its highest temperature 5 hours after kindling. An hour later it began to cool and next morning, 20 hours after kindling, it was only smouldering.

When the mass had cooled down it was taken to pieces, revealing the following results. At the west end of the wall there were three distinct layers of fused basalt rubble. The top layer was only 2 to 3 feet wide, but the lower layers were vitrified over the whole space between the brick faces (fig. 4). At the east end the two bottom layers of basalt



Fig. 5. Artificially Vitrified Basalt showing Drops.

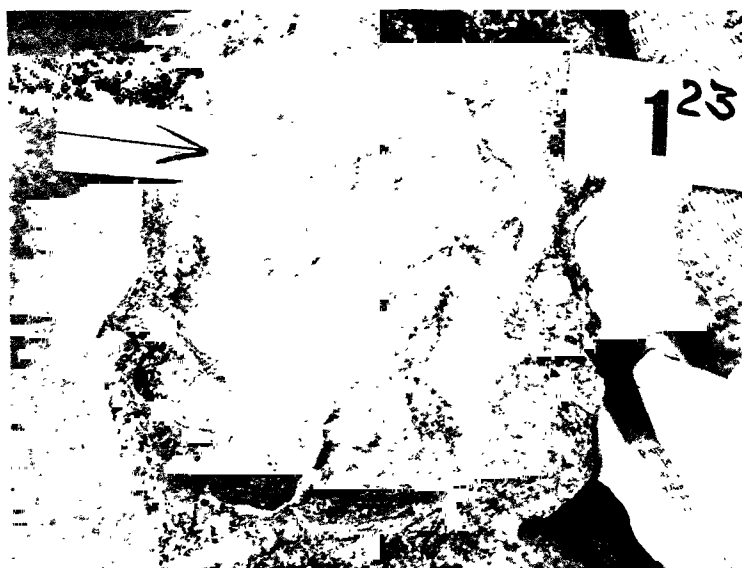


Fig. 6. Artificially Vitrified Basalt showing casts of Timbers.

THE PHENOMENA DISTINCTIVE OF VITRIFIED FORTS. 51

were fused into a solid mass 21 inches thick. The heaviest single block of vitrified basalt weighed 3.5 cwt., and the total weight of lumps, exceeding .5 cwt. each, was 14.5 cwt. One lump had been fused onto the brick of the foundation course (just as at Rahoy a lump is fused onto bed-rock) and the distinctive phenomena emphasized above (drops (fig. 5), casts of timber (fig. 6), inclusions of charcoal), were all represented.

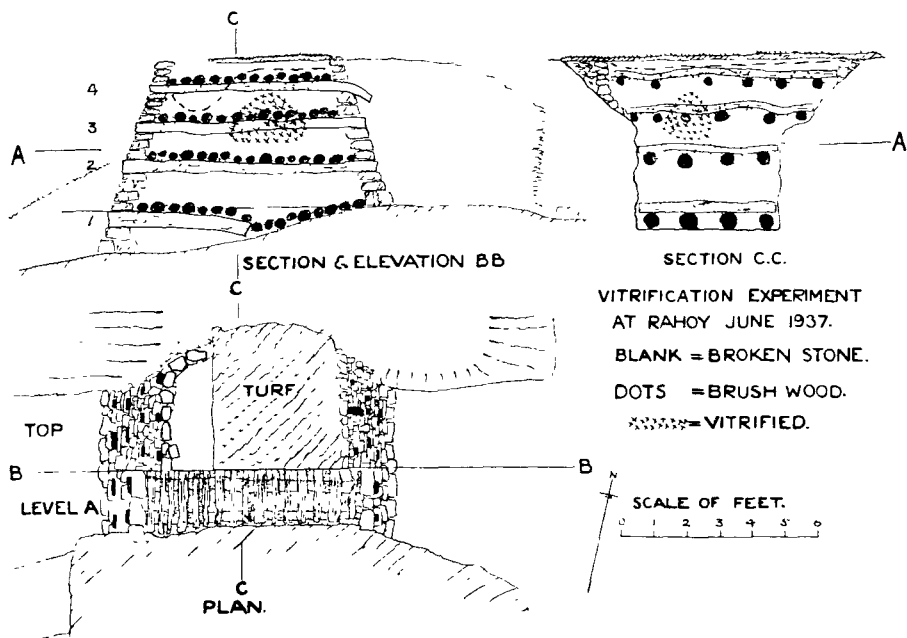


Fig. 7. Rahoy: Model Wall.

A thick layer of charred material covered the earth under the site of the wall.

2. A smaller *murus gallicus* was built at Rahoy in June 1937 out of stones that had been actually used in the ancient fort, but we were hampered by lack of suitable timber. The wall was built across the cut through the rampart that we had made the previous year. This was about 4.25 feet wide for the first 3 feet from bed-rock (*i.e.* to the tops of the original vitrified core in the cut's faces) and widened out above. The rock slopes up from the outside to the interior of the fort so that its surface was about 1.25 feet lower under the outer edge of our model than under its inner edge (fig. 7).

A rough foundation wall was first built on the outside. Four logs, 4.5 feet long and 6 to 8 inches in diameter, were laid horizontally on

its top and on the rock slope, the spaces between them being filled as closely as possible with light dry brushwood. Across the logs short lengths of timber of 3 to 4 inches diameter were laid and continued on the rock up to the inner face's foundation, 8 feet from the outer face.

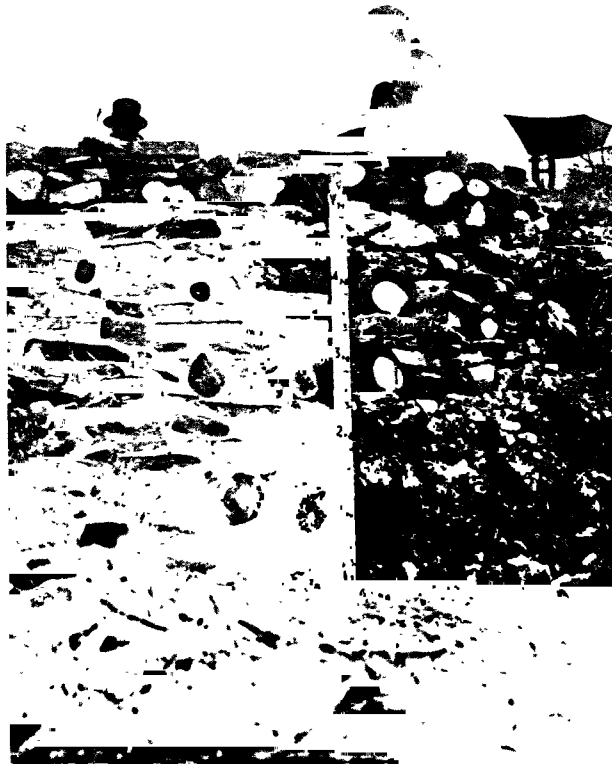


Fig. 8. Rahoy: Model Wall completed.

The spaces above and below the timbers were filled with schist broken to road-metal size and brought up to a level about 1 foot above the first logs. On these another four logs, about 8 feet long and 4 to 6 inches in diameter, were laid down transversely with smaller longitudinal timbers upon them as before, the facing stones being built up with considerable batter. In this way the wall was carried up till there were four tiers of transverse timbers, each supporting longitudinal timbers. The transverse timbers project through both faces (fig. 8).

All the timbers were covered with loose broken stones and a blanket

of turf was laid upon the topmost layer of broken stones, not covering it entirely, but leaving an open strip along the outside edge. Rough logs and brushwood were then piled up against the inner and outer faces.

The piles of timber were kindled at 11.30 a.m. on June 24, when there was a light breeze from the north-west (our cut opens to the west). By 11.45 a little steam was rising from the unblanketed strip of the wall, and by 11.50 the turf was beginning to smoulder. The steam now had a bluish tinge, indicating that the process of distillation of the timber in the wall had begun with the formation of some charcoal. By 2 p.m. red glow was visible through chinks in the outer face, while blue smoke was pouring out from gaps in the upper courses of the inner face. During the afternoon these manifestations of combustion were intensified. But about 5 p.m., believing that too much cold air was reaching the core through gaps in the outer face, we temporarily rekindled the fire against it in the hope of warming up the draught. Actually the steam and products of combustion blown in from without seem to have damped down the combustion in the interior since at 5.45 no more red glow could be seen from outside, though the top and inner face were still smoking vigorously.

Revisiting the fire at 10.30 p.m., we saw no more smoke. The turf on the top had been entirely consumed, revealing the loose stones glowing dull red with flames flickering over them as the carbon monoxide, resulting from the incomplete combustion of the charcoal in the wall, caught fire. The upper courses of the inner face were also red hot over a space about 2 feet square with a brighter glow visible in the interior through the beam holes. Below all was black. As the wind had fallen we piled additional logs on the top to create a draught. These caught fire at once and did in fact seem to increase the heat at the centre. They were still burning when we went home at 11.30 p.m.

Next morning the fire was extinct. Both faces were standing, but the sagging and buckling due to the consumption of the tie-beams produced an effect very strongly reminiscent of the distorted inner face of the prehistoric rampart at Rahoy itself (fig. 9). The rubble core had subsided very little where the turf blanket had been, but at the north-west corner had subsided as much as 18 inches. The whole of the timber built into the wall had been consumed except the south transverse log in the top row and 5 longitudinal timbers resting on the ground at the base, but a number of fragments of charcoal were found among the loose broken stones. Some wood ash had fused into the stones.

When we cleared away the loose stones to the level between where the 4th and 3rd layers of tie beams had been, we began to find some

vitrified stones in the centre, and they became more numerous down to a level between layers 3 and 2. This more or less vitrified mass is shown in the section and was estimated to weigh about 2.5 cwt. It broke up more or less when we removed it, but there were lumps weighing 5 to 10 lb. quite solidly welded together.



Fig. 9. Model Wall after burning.

An essential moment in the production of vitrification by the method just described is the conversion of the wood into charcoal by a process of distillation in which heat is absorbed by the timbers. It is only after the completion of this endothermic reaction that the combustion of the resultant charcoal under suitable conditions of ventilation and in contact with the stones produces the high temperature needed to fuse the rocks (*cf.* the glowing masses observed in the later phases of both experiments). The formation of casts of timbers would be an occasional and accidental by-product of the process. It means that a piece of wood became surrounded with molten stone so as to prevent the charcoal burning save very slowly and consequently without emitting enough heat to re-melt the cast.

We would insist on the small scale of both experiments. The total heat generated by the combustion of a wall 20 feet wide and 12 to 16 feet

high as at Finavon or even 10 feet wide as at Rahoy would have been disproportionately greater than anything obtainable in a model. The Rahoy experiment was handicapped by the unsuitably shaped timbers, the small height, and the low wind. Bearing these facts in mind we submit that our experiments prove the following points.

1. The combustion of a *murus gallicus* will produce temperatures of the order requisite to fuse stones actually used in "vitrified forts" and will reproduce the outstanding phenomena of vitrification.

2. Under suitable conditions of wind such a wall could be set alight by an external fire—for instance a forest-fire, a fire kindled by enemies against the rampart, or the conflagration of thatched wooden houses built against the rampart inside the fort.

3. The consumption of the tie-beams may involve the almost complete collapse of the faces, leaving a core of vitrified material standing more or less on the line of the wall much in the manner apparently illustrated by *e.g.* Goat Island, or it may leave the face distorted like the inner face at Rahoy.

4. We admit that only rocks containing a suitable mixture of minerals in addition to silica could be vitrified under the conditions we envisage; for the range of temperatures producible would be between 950° C. and 1200° C. Highly silicious rocks such as Carboniferous Sandstones would not be fused; while the more mixed Old Red Sandstones, formed from broken down volcanic and metamorphic rocks, have yielded the vitrified ramparts of Finavon, Craig Phadrig, Ord of Kessock, Cnoc Farril, etc.

To this extent the hypothesis of French and German archæologists that vitrification is in general the by-product of the destruction by fire of a *murus gallicus* seems to be vindicated. Whether it be necessary to suppose that this process was deliberately imitated to produce the more or less vertical faces of vitrified material such as are visible for instance at Goat Island or Tap o' Noth may be left as an open question.

III.

THE ABBEY OF ABERBROTHOCK: TWO EARLY THIRTEENTH-CENTURY SEALS. BY J. D. GILRUTH, M.D., F.S.A. SCOT.

This communication deals with two seals that were found in the debris of the monastery of the Abbey of Arbroath. The church of that monastery was founded by King William the Lion in 1178 and dedicated to Thomas à Becket, and at the high altar of that church King William's remains were laid to rest in December 1214.

Seal No. 1 is at present in the Museum at Montrose. Over a year ago Dr Ewart, the Chairman of the Museum Committee, asked my help in finding out something about this seal (fig. 1). Later I was informed by the late Ex-Provost J. Noel Johnston that the seal was found in the ruins of the Abbey of Arbroath about 1820, and was presented to the Montrose Museum in 1841.



Fig. 1. The Impression of and the Seal of [Prior?] Robert de Lambely.

The seal is described by Laing,¹ under the title "Robert Lambile," as "A figure of a monk kneeling at prayer. 'S. ROBERTI DE LAMBILE.' The original brass matrix of this seal was found in the ruins of Arbroath Abbey, and is now in the Museum of the Society of Antiquaries of Montrose." Birch says that the seal bears "a figure of a kneeling monk with the Sun of Righteousness over his head. It is," he goes on to say, "of doubtful identity, as the legend does not absolutely associate Robert de Lambile with the monastic profession."²

The seal is made of brass, and has a lozenge-shaped surface measuring 28 mm. by 18 mm. The legend has on both sides a line of small dots. Careful examination shows that the words are as Laing wrote. The D and E of the DE are separated by the feet of the monk, whose figure in profile is arrayed in a simple folded habit that reaches to his feet. He wears a hood folded over the shoulders. He is tonsured on the corona. His hands are apparently together in prayer. Above his head there is a star with six points. Above that, and in the scroll of

¹ *Descriptive Catalogue of Impressions from Ancient Scottish Seals*, p. 206. No. 1142.

² *History of Scottish Seals*, vol. ii. p. 74.

the legend, there is a cross "potent." Between the cross and the letter E of the Lambile appear two parallel scrolls indicating the end of the legend. The translation of the legend is "Seal of Robert de Lambile." Who and what was Robert de Lambile?

I am indebted to Mr Henry M. Paton, Curator of Historical Records, H.M. Register House, Edinburgh, for first suggesting to me that the name Lambile is a latinised form of the name "Lambeley" which is found in the Registers of Arbroath Abbey.

Last year Ex-Provost Johnston, Montrose, sent me six letters written by Mr Patrick Chalmers, Aldbar, Brechin, in 1846-7. In one of those letters he says: "On looking at an old charter from Lord Airlie's Charter Room at Cortachy, I find Richard de Lambeley, Prior of Arbroath, in the time of Abbot Gilbert." This charter is incorporated in the *Liber S. Thome de Aberbrothoc*, pt. i. (Cortac. Origin., No. viii. p. 334), published by the Bannatyne Club, under the editorship of Mr Chalmers and Cosmo Innes. In a letter dated 27th November 1846 Mr Chalmers says: "There is no doubt that the inscription is 'S. ROBERTI DE LAMBILE,' who was probably a relative of Richard de Lambeley, Prior of the Monastery." Again, on 21st December 1846 he writes: "Richard de Lambiley was Prior, temp. Gilbert, Abbot before 1214 and probably till about 1225-6. Reg. Morav.; Charter penes. E. of Airly, and Chart. de Lindores." That the name on the seal is probably a form of Lambeley we may all agree.

Where then do we find the said name of Lambeley? Radulphus de Lamley was Abbot on 30th March 1226,¹ but he appears in the Arbroath Registers as Radulphus only. We have to look to the *Chronicles of Melrose* for his surname De Lamley.² There we find it recorded that Radulphus de Lamley, Abbot of Aberbrothock, was created Bishop of Aberdeen in 1239. The words are: "Dompnus Radulphus de Lamley Abbas de Haberbrothoc." It was apparently during this Abbot's time that the Church of St Thomas the Martyr was dedicated on the eighth day of the Ides of May, 1233.³ Radulph died as Bishop of Aberdeen in 1247.⁴

But the name Lambeley appears elsewhere. In a charter granted by Abbot Radulphus (1226-39) dealing with the lands of Kenny in the parish of Kingoldrum, perambulation is mentioned as having taken place in the time of the previous abbot, namely, Gilbert (*circa* 1214-25) (fig. 2).⁵

¹ *Liber S. Thome*, pt. i. p. 120.

² Anderson and Dickinson. *The Chronicle of Melrose*, facsimile edition, 1936, p. 86.

³ *Loc. cit.*, p. 82.

⁴ *Loc. cit.*, p. 107.

⁵ *Liber S. Thome*, No. 306, p. 262.

Through the kindness of Mr Marryat Dobie, Keeper of Manuscripts in the National Library, I have had the opportunity of

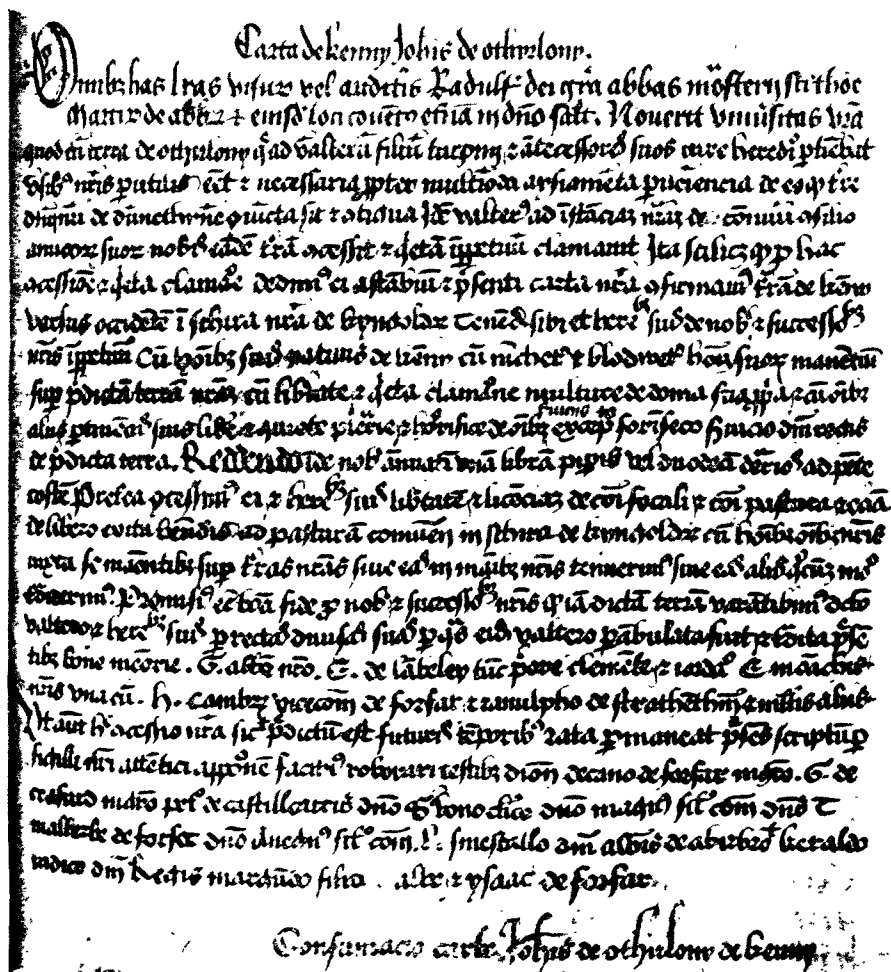


Fig. 2. The Charter of Kenny (1226-1239).

examining this charter and of photographing the page. The Arbroath Registers have long reposed in our National Library. This charter has many interesting features, one or two of which it may not be out of place to mention. The charter is one of excambion or exchange. It has a clause of "quitclaim." John of Othyrlyony takes over the lands

of Kenny in Kingoldrum (the name Kenny survives to the present time), and Walter, the son of Turpin, takes over the lands of Othyrlogy. The name of Othyrlogy or Ochterlogy also survives not far from Dunnichen. The family of which this is our first record still holds lands in Angus.

The lands of Kenny are conveyed along "with the men native to Kenny." The ancient feudal privileges of "Bloodwite and Mercheta" are given: "Blodwitis et Merchetis." "Bloodwite" is a "wite" or fine paid as a composition for the shedding of blood. "Mercheta," or "Mercheta Mulierum," refers to compensation paid by inferior tenants to lords for liberty to dispose of their daughters in marriage. "Forinsec" services to the king in regard to the land are excluded. There is a reddendo of a pound of pepper or twelve pence at Pentecost.

Warrandice is granted to Walter, and the lands of Kenny had been perambulated in the presence of the following: G. Abbot ("bone memorie"); E. de Lambeley, "tunc priore" (then prior); Clement and Jordan, monks; Hugh of Cambron, Sheriff of Forfar, and many others. The document is witnessed by a certain Serlo, a clerk to the king; Adam, the Lord Abbot's senescallus, or steward, and others.

Now the editors of the Bannatyne Club Register seemed to doubt the E of De Lambeley, so they inserted a capital R after it in brackets. The reason for this will be seen later. Professor R. K. Hannay, to whom I showed the photo of the document, at once noticed an irregularity. Before the word "monachis" there is another capital E, and this is reproduced in the Bannatyne Register as "ee." But it is clear that the monk who entered this document in the Abbey Register must have been confused, and when we consider a further document, a confirmation of this same charter granted by Abbot William in 1351, the confusion is the more apparent.

There is a Charter of Confirmation (*inspeximus*) of Kenny, 1351, in the Charter Room of Cortachy. A transcript appears in the *Liber S. Thome*, pt. i. p. 334. This is a copy of the original document seen by Patrick Chalmers in 1846.

In June 1937 Lord Airlie allowed me to see, examine, and photograph the original charter in Cortachy Muniment Room (fig. 3). The document measures 20½ inches by 13½ inches, is yellow from age, and has been folded for a long time. It is otherwise in good condition and legible. This charter is verbally the same as the earlier Charter of Kenny until the words are reached that deal with the portion referring to the perambulation of the lands. Here the name of the abbot, Gilbert, is given in full, and instead of E. de Lambeley, the name given

is Richard de Lambeley. As before, he is "tunc priore" (then prior). After that we have the same monks, Clement and Jordan, but instead of "e monachis nostris" there appears "et Adam monachis nostris." In view, therefore, of the contracted and inaccurate record of the perambulation inserted into the old register, and the greater care with which

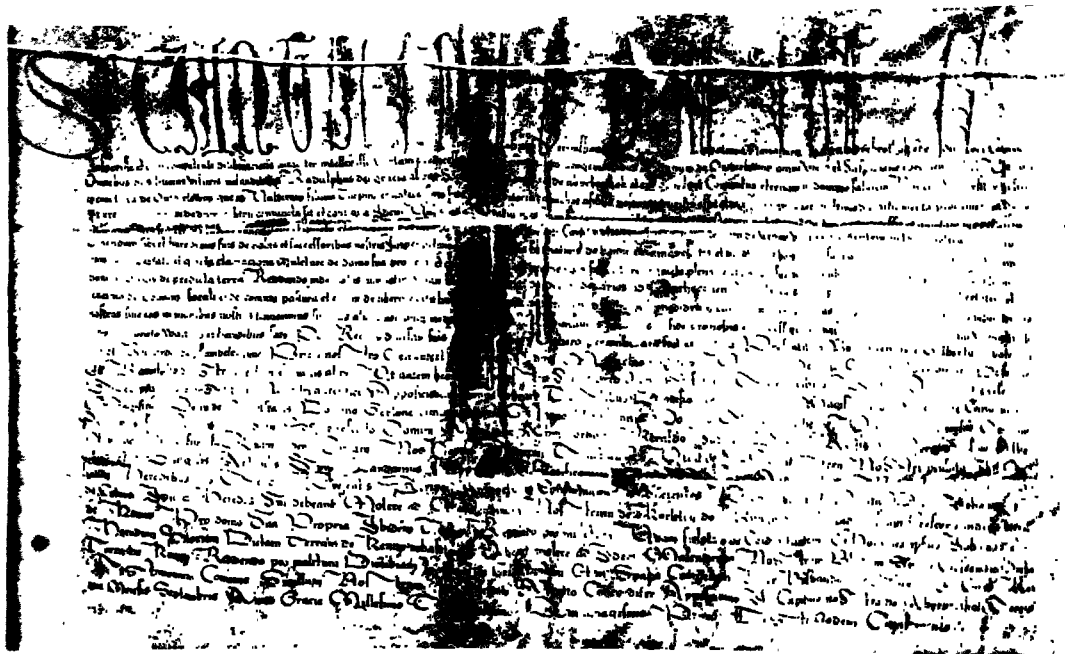


Fig. 3. The Confirmation of the Charter of Kenny (1351), Cortachy Muniment Room.

the Airlie document seems to have been prepared, we may fairly assume that the latter, the charter of "inspeximus," is the more correct, and that the name of the prior was really Richard de Lambeley.

We have thus encountered two De Lambeleys, one an Abbot and one a Prior. Who then was Robert of the same name?

There was an Abbot Robert in 1261, twenty-two years after Radulphus went to Aberdeen.¹ Could he have been the man? In this regard it is interesting to note that in 1260 one Eustace, Abbot of Aberbrothock, accompanied the Bishop of Brechin in a pedestrian tour through the kingdom.² That is certainly in Robert's time. But there

¹ *Reg. Prior. St And.*, p. 286; *Liber S. Thome*, pt. i. p. 208.

² Spottiswoode, *History*, pt. i. p. 213.

is no record of Eustace in the Arbroath Registers. Could this have been the cause of the wrong entry of E by the monk in the early Kenny Charter? Spottiswoode does not give his source, and we have no means of finding where he received his information. All we can conclude from the evidence is as follows:—

1. There was a family of De Lambeleys.
2. One of them, called Richard, was a Prior between 1214 and 1225.
3. One, called Radulph or Ralph, became Abbot in 1225 or 1226.
4. One, named Robert, owned a seal, and was an officer in the Abbey holding an office entitling him to the use of a seal. The only office one can guess at is the office of Prior, and this question must await consideration of our other seal.

The name De Lambeley is probably a territorial name, and in this view let us consider where Lambeley or Lamley may have been.

The name Lambeley or Lamley may be, as suggested by David Miller, the name of lands still known as Langley, or Langley Park, near Dun, in Angus.¹ But it is perhaps more probable that the name refers to lands to which reference is made in the later charters of Arbroath as Lamlaw. This was a small property in the near vicinity of Arbroath which, we find from a register in 1500, lay just outside the considerable tract of land which the monks used as a farm known as their "Ward."² It was leased along with Cairnie, part of the Ward, in 1500. The let specifies "*terram que vocatur terra fabrice jacentem prope Carny et terram subtus Lamlaw extra wardam nostram*"; "The land called the Smith's land lying near Cairny and the land lying below Lamlaw outside our Ward." The same terminology appears in a later lease in 1527.³ The position of Lamlaw is now unascertainable, but it must have been somewhere near the present lands of Cairniehill in the north outskirts of Arbroath. The change from Lamley to Lamlaw in three hundred years is not so violent as to be incredible.

Seal No. 2 is in the National Museum of Antiquities, Edinburgh (fig. 4). It is No. 981 in Laing's *Catalogue*, p. 174. This is how he describes it: "A full length figure of an Abbot, in pontifical vestments, his right hand raised, and his left holding a crozier. On each side is a figure of an angel with the thurible. At the lower part of the seal is a demi-figure of a monk praying. 'S'P. (F?) W. MATHI MONAC. D. ABIRBROTHOT.' The original brass matrix of this seal was found at Arbroath the latter end of last century."

¹ *Arbroath and its Abbey*, p. 192.

² *Liber S. Thome*, pt. ii, p. 329, No. 408.

³ *Loc. cit.*, p. 473, No. 673.

Birch¹ says it is "of the thirteenth century." and "appertained to Brother W. Matthew." "Here," he says, "under a canopy of triple arcades, we observe a figure of the Patron Martyr, the renowned Thomas of Canterbury, lifting up the right hand conventionally in the attitude of one pronouncing a benediction, between two kneeling angels, one of whom holds a censer and a palm branch, the other the quatrefoil flower of divine love and a palm branch; in base under a smaller canopy is the figure of the monk half length in profile to the left. The legend in this case leaves no doubt that the seal belonged to the above-mentioned monk, for the legend reads: 'S. F. W. MATH'I MONACI D'ABIR-BROTHOT.'"



Fig. 4. Impression of the Seal of W. the son of Mathews, monk of Abirbrothot.

The matrix is made of brass, is oval in shape, and measures 29 mm. by 22 mm. (fig. 4).

The figure of the Archbishop in the centre stands under a canopy of a debased cusped ogival arch, ornamented above by three crockets of fleur-de-lis character. The archbishop holds his right hand raised in benediction. In his left hand he holds the crozier, the distinctive feature of an archbishop. Bishops hold the crook. The two small censuring angels, one on each side, are swinging the thuribles, which appear at the level of the saint's head. The feet of the archbishop stand on a platform formed by two conjoined triangles, panelled, the space immediately underneath the figure arranged to accommodate the small kneeling figure of a monk. He is in the attitude of prayer. On his shoulder he has a folded hood. This figure in profile, especially the hands, the hood, and the folded habit, corresponds narrowly to the figure in the Lambile Seal No. 1.

I am indebted to Mr James S. Richardson, H.M. Inspector of Ancient Monuments for Scotland, for valuable assistance in elucidating the various ecclesiastical vestments seen on the seal. If we compare the detail with plate III. in the *Glossary of Ecclesiastical Ornament* by A. W. Pugin, we readily recognise the archiepiscopal dress. He holds the crozier and wears the mitre. The amice is unmistakable round the neck, and the pallium is distinct lying over the orphrey of the chasuble. The chasuble itself is neatly folded, and covers arms and body. The albe reaches to the feet, and the two terminations of the stole are clearly delineated. One cannot detect a dalmatic, but the maniple is noticeable falling from the arm on the left side.

It is interesting to compare these vestments with the splendid

¹ *Loc. cit.*, p. 74.

fragment of sculpture, which has survived to us in a sadly mutilated state, found and preserved in the Abbey (fig. 5). It is all that we have of a noble figure of Saint Thomas that once stood in some sacred place



Fig. 5. Statue of Thomas à Becket, Archbishop of Canterbury.
Abbot's House Museum, Arbroath.

and probably in some conspicuous position. It is made of fine free-stone, and stands 4 feet 6 inches in height. The right hand and forearm, now lost, had apparently also been held up in benediction. That he held the crozier in his left hand, now also similarly torn off with its forearm, admits of no possible doubt, as we see where the long staff impinged against the chasuble. The orphrey of the chasuble is richly decorated with intricate embroidery, and so are the amice, the stole, the maniple, and the apparel of the albe. The stole and maniple are tasselled. Minute evidences of gold embroidery can still be seen. The

statue itself was at one time decked out in many colours, and must have been an imposing sight.

The illustration is taken from a photo of the statue kindly lent for the purpose of this paper by the Department of Ancient Monuments, H.M. Office of Works, Edinburgh.

The legend runs almost as Laing read it. S stands for Sigillum. The next letter may be a P or a D, more probably the latter, representing "Domini" or "Dompni," a common designation for a monk. The large W may be William or it may be Walter. The M of MATHI is Lombardic, and when we examine the lettering further we notice that the letters adhere to the Lombardic character, to a large extent if not entirely. The MATHI has a definite circumflex sign over the second half of the H, denoting the genitive as in the Abbey Charters. This means that the word is Mathei, the son of Matheus. The D before Abirbrothot is attached to the rest of the word and not separated by a dot as Laing indicated. The translation submitted is: "The seal of Prior W. (or Dom. W.) the son of Matheus, monk of Aberbrothock."

A small portion of the outer band round the legend at the top left shows a faint dotted curve.

Whose name does this seal record? Professor R. K. Hannay, to whom I submitted an impression of the seal, gave me the first clue to its interpretation when he suggested that it must belong to one of the officers of the monastery. Of the various officials in the earlier period, the one to whom the seal most readily applies is the Prior.

This office of Prior is disclosed to us in very early charters. Later the office of sub-prior is mentioned. The Prior seems to have acted as Vice-Regent to the Abbot. Later we have direct evidence that he presided over the meetings of the monks when the Abbot was elected. There is no reason to think that this function was not exercised even at an early period. Further consideration must be deferred until we discuss the evidence regarding Prior W.

Two priors are mentioned in early thirteenth-century charters of the Abbey of Aberbrothock, and only two. This does not mean that the office of Prior did not continue. One prior we have already met in the form of a certain De Lambeley, the surname denoted on No. 1 Seal; the other is Prior W., who figures in Charter 63, p. 42, of the *Liber S. Thome*, in connection with certain lands in the territory of Rossyn or Rossie, near Montrose. This charter has also been seen and a portion photographed in the National Library, and is here submitted (fig. 6).

The charter records that Hugo Malherbe, the son of Hugo Malherbe,

gave "two bovates of land" to the Abbey, and that those two bovates were perambulated "coram domino W. Priore de Abirbr. et coram domino Clemente ejusdem loci monacho," also in the presence of others whose names are mentioned "et multis aliis" (and many others)

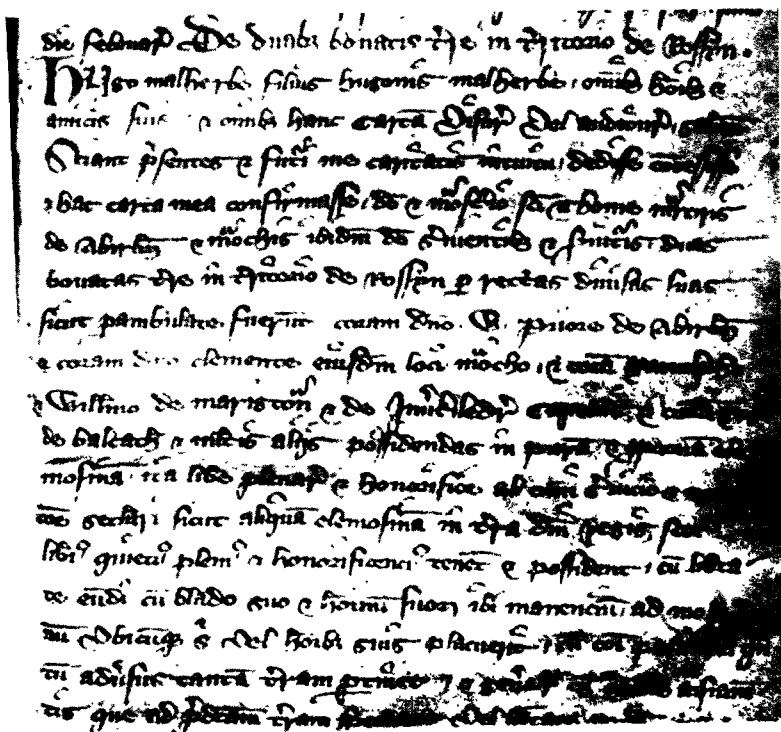


Fig. 6. The Charter of two bovates of land in the territory of Rossie (1211-1214).

(fol. 57). Amongst those names we find that of Roger de Balcathyn, who is mentioned elsewhere as one of two Provosts of Arbroath, ("prepositus").¹ He also attests as a witness. Other witnesses are Serlo, the clerk, and A. [Adam], the senescallus, with his son Robert; also another senescallus, named Robert. Note that we have already encountered both of those names Serlo and Adam in the Charters of Kenny.

The date of this charter is given as 1211-14 by the editors of the Bannatyne edition.² King William the Lion confirmed this charter,³

¹ *Liber S. Thome*, pt. i. p. 55.

² *Loc. cit.*, p. iv.

³ *Loc. cit.*, p. 43.

and as he died in December 1214, the gift of Malherbe occurred in or before 1214. Compare now this charter with the Kenny Charter further. Both charters deal with records of perambulations. The monk Clement was present at both perambulations. Adam, the senescallus, and Serlo, who were therefore alive before 1214 and after 1225, as pointed out, witnessed both documents. The name De Lambeley and that of Prior W. in one and the other correspond, to some extent at least, with the two seals under examination. We can also fix an approximate date for the perambulations. The Kenny Charter, although in Radulph's time (1226-39), tells us that the perambulation was carried out in Gilbert's period (1214-25). The Rossie Charter deals with a perambulation in or before 1214, so that we can conclude that the Prior Richard de Lambeley and Prior W. both held this office in a period with its centre round about the end of the second decade of the thirteenth century.

Priors do not appear again in our Abbey Registers for two hundred years. The first sub-prior we are told of is called Thomas de Fowlis, (1425)¹ and he acts as Vice-Abbot in the Abbot's absence, "abbate in remotis agente." Later, in 1455, Thomas Driden is claustral sub-prior of the monastery, in a document regarding the resignation of Abbot Richard, which resignation is placed in the hands of Thomas.² At the election of Richard Guthrie, Abbot in 1470, described as Professor of Sacred Theology and prior of the monastery, a certain John Ancoll, then claustral sub-prior, presided.³

On 8th August 1482 William Bonkyl, a monk of the Abbey, was elected Abbot, and Thomas Bet, the Sub-Prior presided.⁴ The speech proposing election is recorded. After the election the monks sang the Te Deum Laudamus, and caused the bells to be rung in the Abbey Church.

The name following the large W is Mathi. As said, it is probably the genitive of Matheus.

In the charters of the early thirteenth century many persons called Matheus appear. One, an early witness, is the son of Dufsyth, the ancient celtic lord of Conan, or Cairnconan.⁵ The son of Matheus, the son of Dufsyth of Conan, also appears.⁶ Matheus is also a burgess of Aberbrothock in 1242,⁷ showing how early persons claimed their burgess

¹ *Liber S. Thome*, pt. ii. p. 56.

² *Loc. cit.*, p. 87.

³ *Loc. cit.*, p. 165.

⁴ *Loc. cit.*, p. 184.

⁵ *Liber S. Thome*, pt. i. p. 40, *post* 1180.

⁶ *Loc. cit.*, p. 162.

⁷ *Loc. cit.*, p. 82.

rights. Magister Matheus was Chancellor to Alexander II., and he attests a charter in 1229,¹ also in 1219. From the beginning of our charters, Matheus, Bishop of Aberdeen, previously Archdeacon of St Andrews, is witness to documents. He it was who, in 1178, consecrated Abbot Reginald, who came from Kelso as first Abbot of Aberbrothock, the see of St Andrews being vacant at the time. This ceremony took place in the presence of the King, William the Lion, at Arbroath.² This Matheus of Kininmonth founded the Cathedral of St Machar at the Bridge of Don.³

We may now conclude by summing up the visible and documentary evidence which may have some reference to the seals under review.

(1) Both the seals belong to the early thirteenth century, and are connected with Arbroath Abbey Monastery. (2) They were probably made by the same person, and about the same time. (3) They were probably used by (a) a prior of the family of De Lambeley, which family gave at least two other officials to the monastery, Richard de Lambeley, Prior, and Radulph de Lambeley, Abbot; and (b) a prior named W. whose father may have been one of the several persons called Matheus mentioned in the documents, and whose name may be recorded in a particular charter. (4) The seals were probably in use by those Priors in the election of new Abbots, and when they acted as Vice-Regent in the Abbot's absence.

¹ *Loc. cit.*, p. 79; also p. 86.

² *Liber S. Thome*, pt. i. p. 9.

³ Spottiswoode, *History*, pt. i. p. 200.

IV.

ANCIENT PORTABLE MONEY-BOX OR "OFFERAND STOK."

By CHARLES TAYLOR, F.S.A.Scot.

This portable money-box is of oak, circular on plan, made from a single stick, and cored, bound and riveted with wrought iron with a lock and double hasp covering the key-hole, and with an additional

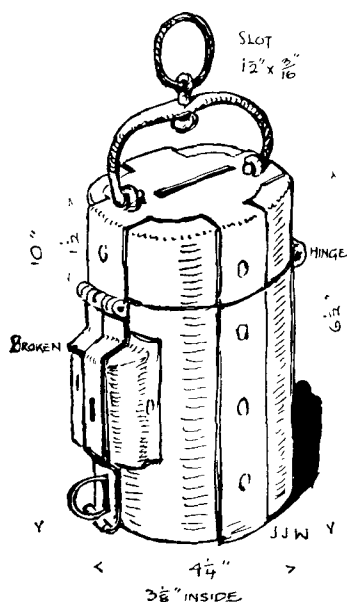


Fig. 1. Old Money-Box or "Offerand Stok."

protection of a ring or hasp for a padlock (fig. 1). The slot in the centre of the hinged lid for the admission of coins has a good balance-flap inside which makes it impossible for any unauthorised person to abstract any coin. A handle and ring surmount the hinged lid.

Unfortunately its history is unknown, except that it has been in its present owner's possession all his life and his father's before him.

It appears to be an offerand stok such as the one believed to belong to St Eloi's altar in St John's Church, Perth, which is described and figured in our *Proceedings*, vol. xx, p. 50. The Perth box, however, is larger and square on plan instead of circular.

The illustration is from a drawing by J. Jeffrey Waddell, F.S.A.Scot.

MONDAY, 10th January 1938.

THE HON. LORD ST VIGEANS, LL.D., Vice-President,
in the Chair.

A Ballot having been taken, the following were elected Fellows:—

JAMES FAIRBAIRN, Shotheds, Oxnam, Jedburgh.

Miss E. MACANDREW, Curator, West Highland Museum, Fort William, Allt-a-Bhruais, Spean Bridge, Inverness-shire.

JAMES C. MACDONALD HAY, "Taigh-na-Bruaich," 445 Vista Grande Avenue, Daly City, California.

P. T. MACKINTOSH, W.S., 30 Murrayfield Avenue, Edinburgh, 12.

WILLIAM NOBLE, 8 Churchhill, Edinburgh, 10.

The following Donations to the Museum were intimated, and thanks voted to the Donors:—

- (1) By Captain HUGH P. LUMSDEN of Auchindoir, Clova, Aberdeenshire.

Collection of Prehistoric Relics, found chiefly on the Clova estates in the parishes of Auchindoir and Premnay, Aberdeenshire.

Flint Implements.

Two horse-shoe shaped, ground round edges: one circular with ground edge: sixteen Knives, two with ground edges and one highly polished on edge; two hundred and seventeen Barbed Arrowheads: one hundred and ninety-one Leaf-shaped Arrowheads; seven Lop-sided Arrowheads; thirteen Spearheads; two Saws and one Axe; and fifty-six miscellaneous objects—Scrapers, Cores, Flakes, etc.

One hundred and sixteen Stone Axes and five perforated Stone Hammers.

Objects of Bronze.

One Sword; part of a Dagger or Rapier Blade; six Flat Axes; three Flanged Axes; five socketed Axes and five miscellaneous objects.

Vessels of Clay.

One Beaker Urn and fragments of another; fragments of six Cinerary Urns, and one small fragment of an Urn, probably Neolithic.

Miscellaneous.

Five Glass Beads; two Stone Beads; one Jet Pendant; five Carved Stone Balls; five Stone Cups; thirty Whorls and thirty miscellaneous objects of stone, bone, etc.

(2) By Miss DARROCH, 21 Gardner's Crescent, Edinburgh.

Silver Brooch in the form of a bow, known as a lover's knot, measuring $1\frac{3}{4}$ inch in length, engraved on the front.

(3) By CARRON COMPANY, Falkirk—

Relics found in the Roman Fort at Croy Hill, Dunbartonshire.

See previous Communication by Sir George Macdonald, Vol. LXXI, p. 32 ff.

The following Purchases for the Museum were announced:—

Pointed oval boat-shaped, cup-like object of Steatite, slightly imperfect at one end, measuring $4\frac{9}{16}$ inches by $2\frac{3}{4}$ inches by $1\frac{1}{4}$ inch. Small lip fragment of a vessel of dark steatitic clay, the lip is sharply everted and has two grooves on the top. Found at Kirkure, Leasome, Eshaness, Northmavine, Shetland.

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By THE DIRECTOR, Russell-Cotes Art Gallery and Museum, Bournemouth.

Bulletin. Vol. XVI., No. 3, September 1937.

(2) By JOHN MOONEY, J.P., F.S.A.Scot.

A Short Account of S. Magnus Cathedral, Kirkwall. For the use of visitors. By George Walker, T.D., D.D. Aberdeen, 1937.

(3) By W. DOUGLAS SIMPSON, D.Litt., F.S.A.Scot., the Author.

Lapidorium de Kyndromy. (Reprinted from *Aberdeen University Review*, July 1937.) Aberdeen, 1937.

The Deeside Field. Eighth Number. Aberdeen, 1937.

(4) By ABERDEEN UNIVERSITY.

Aberdeen University Studies: No. 113, Philosophical Orations of

Thomas Reid, delivered at Graduation Ceremonies in King's College, Aberdeen, 1753, 1756, 1759, 1762.

Teinds and Agriculture: An Historical Survey. By Alexander A. Cormack, M.A., D.Litt. Oxford University Press, London, 1930.

(5) By FERGUS ROBERTS, F.S.A.Scot., the Compiler.

Roll of Dumbarton Burgesses and Guild Brethren, 1600–1846, with a continuation thereof to the Present Day. (*Scottish Record Society*, Vol. 71, Part cxxxiii. September, 1937.)

(6) By Commander G. E. P. How, R.N., F.S.A.Scot.

How (of Edinburgh, Limited) 1937. Illustrated Catalogue of Early Silver, etc.

(7) By JAMES CURLE, LL.D., F.S.A.Scot.

Inceputurile vietii Romane la gurile dunarii. Vasile Pârvan. Bucarest, 1923.

Runa: En Skrift för Fäderneslandets Fornvänner, utgifwen af Richard Dybeck. Stockholm, 1842–1845.

Svenska Konstminnen från Medeltiden och Renässansen Aftecknade och Beskrifna på Föranstaltande af Svenska Fornminnesföreningen. Stockholm, 1878–1897.

(8) By GILBERT H. ASKEW, F.S.A.Scot., the Author.

The Northumbrian Bagpipes. Overprint from *Heaton Works Journal*, Vol. II., No. 5.

(9) By THE DIRECTOR, Hull Museum.

Hull Museum Publications, Nos. 191, 193, 194.

(10) By Professor H. DRAGENDORFF, Hon. F.S.A.Scot., the Author.

Der Altar der Roma und des Augustus in Lugdunum. Reprint from *Jahrbuch des Deutschen Archäologischen Instituts*. Band 52, 1937.

(11) By A. D. LACAILLE, F.S.A.Scot., the Author.

Prehistoric Pottery found at Iver, Bucks. (Reprinted from *The Records of Bucks*. Vol. XIII., Part 4, 1937.)

(12) By FRANK MILLER, F.S.A.Scot., the Author.

Poems from the Carlyle Country, together with Papers on Two of Carlyle's Early Friends and some Fragments in Prose. Glasgow, 1937.

(13) By THE SCOTTISH ANTHROPOLOGICAL AND FOLKLORE SOCIETY.
Proceedings. Vol. II., No. 3. October 1937.

(14) By THE CLAN MACCRIMMON SOCIETY.

Genealogical Chart of the MacCrimmon Family. Compiled and Prepared by Mr George C. B. Poulter, Hon. Secretary. 1937.

(15) By THOMAS MCGROUTHER, F.S.A.Scot., the Author.

Carmuir and Camelon. How they got their Names. (Reprinted from *The Falkirk Herald*, 20th November 1937.)

(16) By E. M. M. ALEXANDER, Redhouse, Bridge of Allan, the Compiler.

Scottish Sculptured Stones recorded since *E.C.M.* was published. Vol. I., A. to G, and Vol. II., H to Z.

(17) By Professor Dr P. BOSCH GIMPERA, Rector of Barcelona University.

Monografies d'Art Hispànic. L'Art Grec à Catalunya. Barcelona, 1937.

(18) By L. M. ANGUS-BUTTERWORTH, F.S.A.Scot., the Author.

Notes on the Family of Butterworth of Belfield. (Reprinted from *Transactions of the Rochdale Literary and Scientific Society*, Vol. XIX. 1935-1937.)

The following Purchases for the Library were announced:—

Dictionnaire d'Archéologie Chrétienne et de Liturgie. Vol. XIII., Part 1. Os-Papyrus. Paris, 1937.

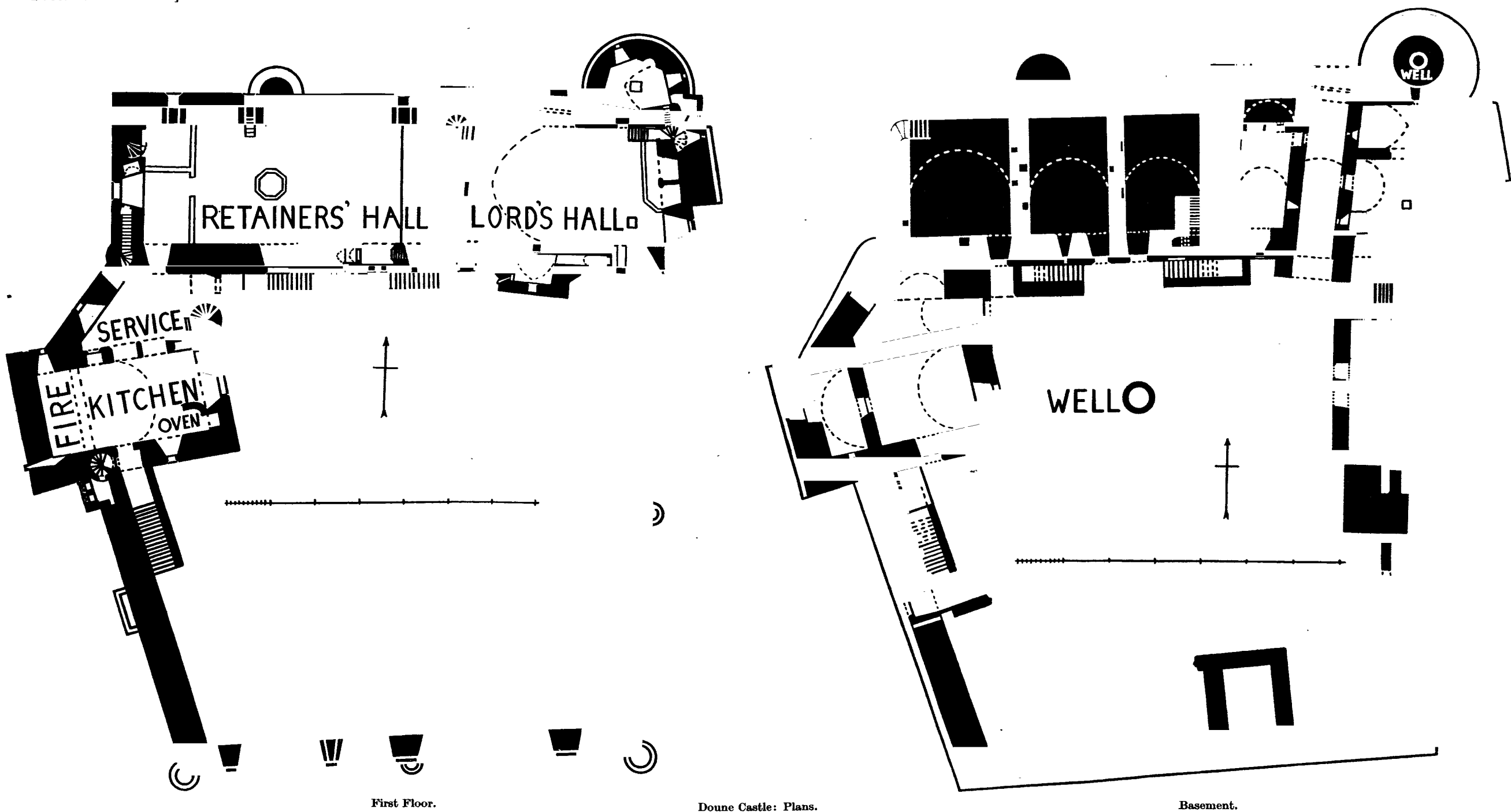
Congrès Préhistorique de France. Compte Rendu de la Douzième Session. Toulouse-Foix, 1936. Paris 1937.

The Dictionary of National Biography. Supplement, Jan. 1901-Dec. 1911. Vol. I. Abbey-Eyre. London, 1927.

Index covering the years 1901-1921. London, 1927.

Index covering the years 1901-1930. London, 1937.

The following Communications were read: —



First Floor.

Doune Castle: Plans.

Basement.

W. DOUGLAS SIMPSON.

CORRIGENDA.

Page 73, line 14. *For* “north-west” *read* “north-east.”

Page 80, line 26. *For* “neighbours” *read* “neighbourhood.”

Page 82, note 1. *For* “xx” *read* “xxi.”

I.

DOUNE CASTLE. BY W. DOUGLAS SIMPSON,
M.A., D.LITT., F.S.A.ScOT.

Doune Castle, built within the earthworks of the earlier *dun* or fort which gave the site its name,¹ occupies a lofty and commanding position, overlooking the River Teith, and in the sharp angle which that "arrowy" stream makes with its brisk tributary, the Ardoch Water. The castle was built, towards the end of the fourteenth century, by Robert Stewart, Duke of Albany, Regent of Scotland in the reign of Robert III and James I.²

In all save minor alterations and additions a work of one uniform building effort, the castle (see plans, Plate III) forms an irregular pentagon in plan, the habitable buildings being on the north and north-west sides, while the remainder of the enclosure is screened by a high and massive curtain wall (figs. 1, 2). These domestic buildings divide themselves into three great blocks: the donjon or tower-house at the north-west corner; the hall block extending westward from the donjon; and the kitchen wing, or tower, which occupies the south-west corner. The donjon—called "the grait tour" in 1581³—contains the entrance, covered by a powerful round tower, and forms a complete and segregated residence for the lord, his family and their personal staff. The long vaulted trance is strongly defended by a portcullis, worked from a window-bay in the hall above, by wooden folding doors, and by a massive two-leaved iron "yett." On either side are vaulted guardrooms, cellars, and a prison. From the guardrooms the trance is commanded by loopholes suitably disposed. On the first floor is a spacious and well-lit, vaulted hall; there is a solar above, with a neatly fitted up little oratory in a window bay; and over all were garret bedrooms. At the north-east corner of the donjon is the stout round tower which (as already stated) flanks the entrance. It is vaulted from bottom to top, containing a

¹ Most probably prehistoric, though we cannot exclude the possibility that they may be the remains of an early Norman castle. At Invernochty in Aberdeenshire the Celtic word "Doune" is applied to such an earthwork.

² The history of Doune Castle is fully set forth in Sir William Fraser, *The Red Book of Menteith*, vol. i. pp. 471-96. It is architecturally described, with a full series of measured drawings, by D. Macgibbon and T. Ross, *The Castellated and Domestic Architecture of Scotland*, vol. i. pp. 418-29. The plans accompanying the present paper are based on those of Macgibbon and Ross, with certain additions and corrections.

³ R. S. Mylne, *The Master Masons to the Crown of Scotland*, p. 60.

well-room in the basement and a succession of private chambers above. On the inner side of the donjon is a shallow square projecting tower (fig. 2) affording a look-out over the court.

The donjon hall is entered from the court by an exterior stone stair, which was defended by an iron gate at the foot, while the door above was secured with a drawbar. There is no communication, other than



Fig. 1. Doune Castle: View from north-east before Restoration.
[From photo in the Macbean Jacobite Collection, Aberdeen University Library.]

by a trap-door, with the storage in the basement, but two good spiral stairs lead to the floors above. The great double-arched fireplace in the hall is a notable feature. Originally there was no direct access of any kind from the tower-house to the hall block adjoining—the one door which now leads through, on the first floor, being a modern insertion.

The hall block contains the great or common hall of the castle, as distinct from the lord's hall in the tower-house. It is entered by an external stair, like that which serves the lord's hall; but it is significant that this common hall stair is not secured in any way, either below or above. The hall had a central hearth, with a louvre overhead. Under the hall are vaulted cellars, with the usual service stairs—again in contrast to the absence of such communication in the tower-house.



Fig. 2. Doune Castle: Bird's-eye View from south-east, restored.
[Drawn by Thomas Ross, LL.D.]

Above the hall there is nothing to correspond with the solar in the tower-house, as the hall block was only two storeys in height. It had an open-timber roof whose enriched corbels still remain. At its west end were the screens, with a minstrel's gallery above.

The kitchen tower is connected with the hall by a cleverly managed service room. It has cellars in the basement; the kitchen itself, lofty and vaulted, with two enormous service-hatches, adjoins the hall on the same level: and above is accommodation for guests—namely, one large and well-equipped room over the kitchen, and two storeys of smaller chambers over the service room. These are reached by a sixteenth-century turret stair which must replace a predecessor, perhaps of timber. A notable feature is the complete severance of these guest rooms from the tower-house, which was evidently strictly reserved for the lord's own use. The kitchen communicates by an outside stair with a postern, covered by a bold machicolation. With the exception of the main entrance and this postern, there is no opening of any sort, not even a loophole, in the lower part of the outer walls.

Tusks in the south wall of the kitchen tower show that it was intended to carry further buildings round the courtyard. The foundations which still remain, on the south and east sides, are paltry and seem to be late; but the large windows in the south wall—the eastmost being pointed—show that an important building was to have stood here. Very likely this was the chapel, which in this position would be oriented. In 1587 there is a record of two chapels of St Fillan, one within and the other without the castle. As the former can hardly be the tiny oratory in a window arch of the donjon solar, it seems probable that a chapel had actually been built against the south curtain. In the centre of the courtyard is a second draw-well.

An allure walk between front and rear parapets goes all round the curtain, and along the wall-heads of the residential buildings. On the tower-house and the hall block it is carried over the high-pitched roofs by steps. The curtains have open turrets at the angles and in the centre of each face. These seem to be additions of the sixteenth century, and were probably put on in 1581, when the "allering" of the castle was renewed.¹ Midway in the north front (fig. 2) is a small, solid, half-round bastion tower, carrying an open turret at the wall-walk level. In general, the castle exhibits the rugged and unadorned, gloomy grandeur that characterises most Scottish secular architecture during this period. The masonry is coursed rubble, with dressed stonework at the quoins and voids, and the moulded detail is of the heavy

¹ Mylne, *Master Masons*, p. 60.

kind usual in Scotland about 1400. Around the whole castle was an outer breastwork, scraps of which still remain.

It has long been recognised that Doune Castle exhibits close affinities with the great French Château de Pierrefonds, erected by the Duc d'Orleans about 1390-1400. At Pierrefonds, as at Doune, we find (figs. 3, 4) that what is called the donjon forms a great composite mass of building, containing in itself all the accommodation required in a seignorial residence of the first rank. As Viollet le Duc says: ¹

“Le donjon du château peut être complètement isolé des autres défenses. . . . Le donjon était l'habitation spécialement réservée au seigneur et comprenant tous les services nécessaires : caves, cuisines, offices, chambres, garde-robes, salons, et salles du réception.”

As at Doune, the donjon contains the entrance, covered by a special drum tower. Around the courtyard, in the same way as at Doune, are ample halls and other accommodation for the general household and for guests, but kept wholly apart from the lord's establishment in the donjon. The separate outside stairs, affording access to these different apartments, which we have seen at Doune, are a distinctive feature of Pierrefonds. At Pierrefonds also we note the lateral postern and the absence, or almost absence, of openings in the basement of the thick outer walls.

In Scotland a close parallel to Doune, in thesis if not in elaboration or in scale, may be studied at Sanquhar Castle in Nithsdale.² As we see it now, Sanquhar Castle is a piecemeal structure, but the great fifteenth-century frontal consolidation is a work of one design and building effort, and obviously aims to meet the same requirements provided for in the donjon of Doune. At Sanquhar the tower-house contains on the ground floor the main gate, vaulted pend and guardroom, with a large hall, kitchen, and private accommodation for the lord above; at Sanquhar, also, a bold round frontal tower serves the double purpose of enclosing the well and flanking the outer portal. As at Doune, the pend is commanded by an observation loop from the guardroom, and there is no direct communication between the basement and the main floor, which is entered by an outside stair from the courtyard. The side gate at Pierrefonds and Doune is again repeated at Sanquhar.

Obviously these three castles belong to a specialised type, which must owe its development to a specific cause. That cause was inherent

¹ *Description du Château de Pierrefonds*, 4th ed., p. 15; *Dictionnaire de l'architecture*, vol. iii, p. 153.

² See my paper in *Trans. Dumfries and Galloway Nat. Hist. and Antiquarian Society* (forthcoming).

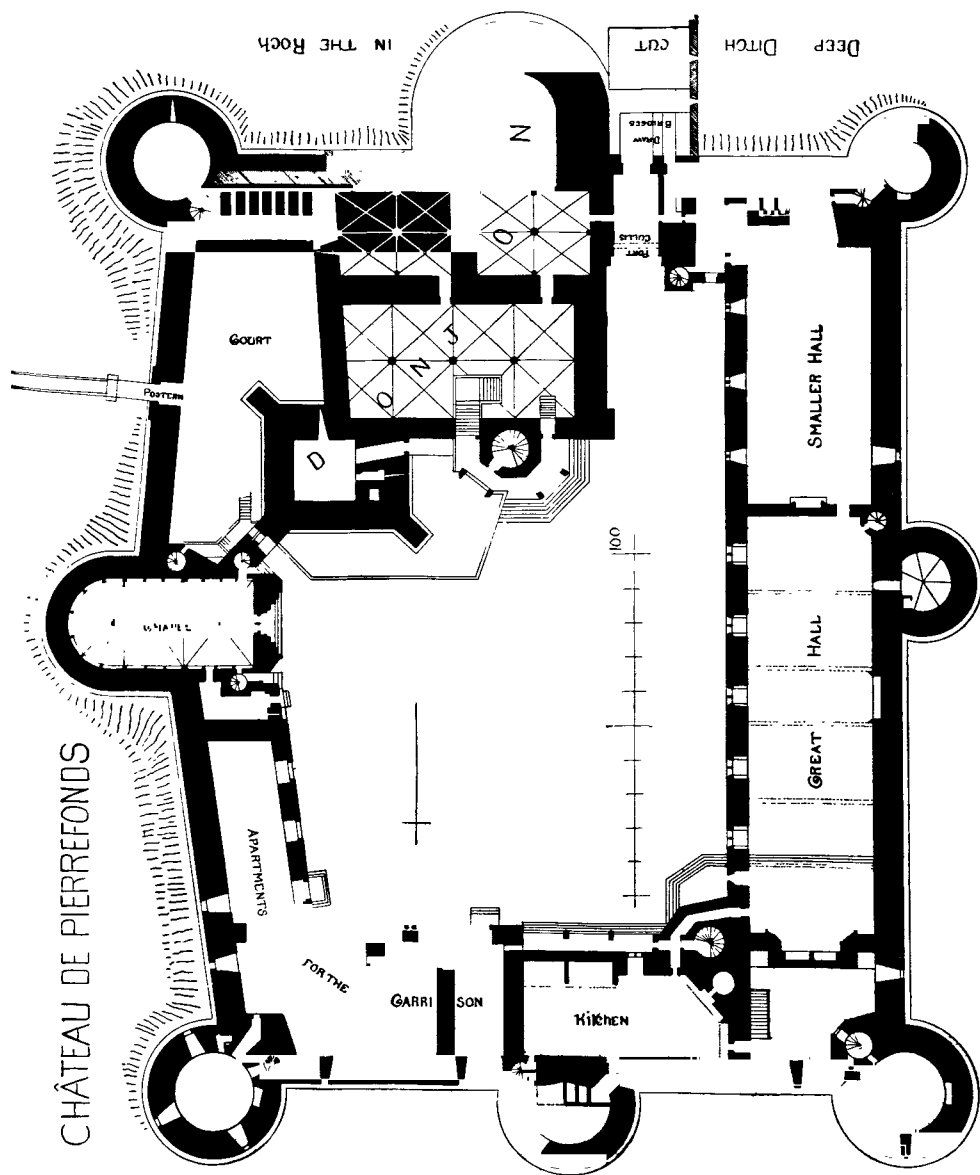


Fig. 3. Château de Pierrefonds: Plan, after Viollet le Duc.

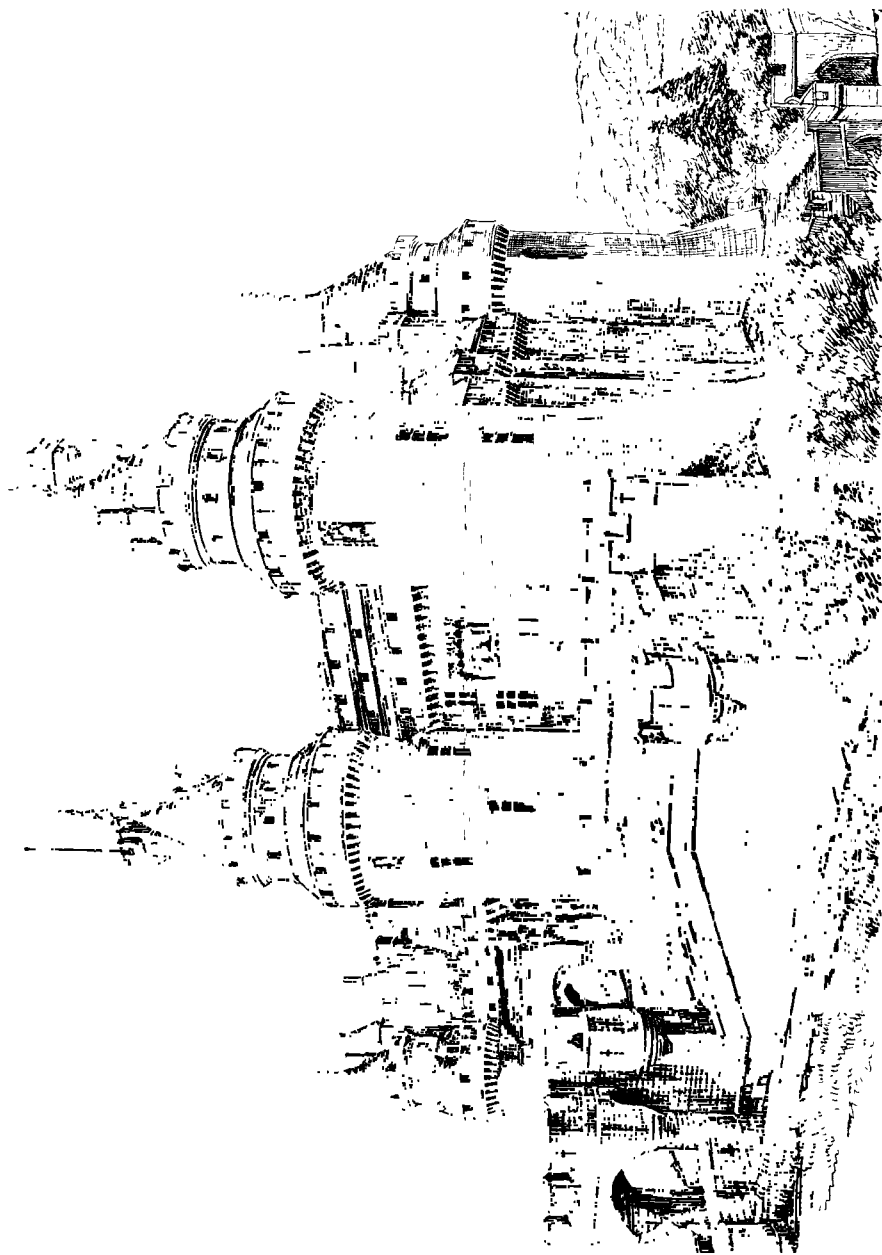


Fig. 4. Château de Pierrefonds: View from south-east.
[Drawn by David Muehlhorn, LL.D.]

in the great change that came over feudal warfare in the later Middle Ages. In olden times a baron would pursue his quarrels and defend his castle with his own vassals, dwelling around him. All that he required, therefore, was a towered curtain wall to fence his house. In time of siege, the tenants whom he called up for garrison purposes would be lodged in the towers. Often, under the system of tenure by castle-guard, each important vassal might have a special tower to look after, and in some cases these towers still bear the vassals' names. But in the later Middle Ages the attack and defence of fortified places had become a high art, for which the tumultuary feudal levies, untrained and ill-equipped, were little fitted. Field warfare also had grown into a specialised science, and campaigns were now pushed through ruthlessly until one side or another was broken. *Der totale Krieg*, to borrow Ludendorff's expressive phrase, had now superseded the chivalric contests, with all their polite conventions, which are so familiar to us in the picturesque pages of Froissart. For warfare of this new type the feudal levies, bound only to serve for short periods at a time, were no longer suitable. More and more therefore—particularly in France during the social breakdown that accompanied the Hundred Years' War—the great barons in their incessant private quarrels with each other came to rely upon mercenary soldiers whom they held in their pay. Quarters for these professionals had to be available; and this meant, for the first time, standing garrisons in each castle. Whereas in former days the castle, in time of peace, would contain only the lord's *familia* or household, it must now provide accommodation for a compact body of mercenary troops. The neighbours of these hard-boiled *lanzknechts* would always be inconvenient and often dangerous, for they did not owe the natural allegiance of vassals, and were at all times liable to be tampered with by their employer's enemies. Hence, for reasons both of privacy and safety, the great French lords of the fourteenth and fifteenth centuries took care to provide their castles with self-contained residences for their families and their personal retinue.

In England a similar development came about in the closing stage of feudalism, before the Wars of the Roses put an end, once for all, to the enlisting of private armies by the baronage. Every student of this period knows how serious an evil the armed retainers of the powerful lords had become, and how energetically the Tudor monarchs grappled with it in their statutes against "livery and maintenance." The mischief had already begun in the latter part of the fourteenth century, and the first Act passed against livery and maintenance dates from 1390. In the overseas wars the English barons had only too aptly learned their

lesson from their French antagonists. Instead of vassals they now surrounded themselves with armed retainers, each wearing his lord's livery and bound to fight for him in all his quarrels; while on his part the lord pledged himself to "maintain" them against all legal consequences of their actions, either by suborning or intimidating juries, or by still more violent measures. Matters drifted from bad to worse after the English were turned out of France, and large numbers of unemployed ex-service men, habituated to violence, were only too glad to accept the livery of a powerful lord:—

"Great landowners, who had crowds of armed retainers in their service, bribed and bullied juries till the administration of the law became a farce, and on the rare occasions when this course failed, they knew how to vindicate their claims by maiming or assassinating their opponents, or by laying siege to houses the possession of which they coveted."¹

All over Western Europe, and as far east as the lands which the Teutonic Order had conquered beyond the Vistula, this new development led to a profound change in the art of castle planning. The mercenaries could not be trusted, and so for their own safety, as well as to ensure their privacy, the lords began to segregate themselves in quarters separate and jealously isolated from the main castle fabric. Sometimes they added a self-contained tower-house so as to provide solar accommodation to an older domestic lay-out within the *enceinte*. This is what happened in England at Tattershall and Buckden; at Holyrood in Scotland; and, on a very great scale, at Marienburg in East Prussia.² In other cases the lords withdrew into a tower-house or donjon wholly separate from the domestic range—often for that purpose reverting to the long abandoned *motte* of an earlier scheme. That was what led to the building of the great donjons at Dudley and Warkworth,³ crowning disused *mottes*, and to those of Nunney and Ashby-de-la-Zouch, where no *motte* was available. But in France, at Pierrefonds, where the whole castle was built on one plan and at one period, we see the new thesis developed *ab initio*, completely and with Gallic logic. That the builder of Doune should so closely have followed a French model is no more than what we should expect from the intimate association of the two countries at this very time. And already in Scotland itself, at the time when Doune was a-building, there was a precedent, equally French in inspiration, for the new conception.

¹ S. R. Gardiner, *Introduction to English History*, p. 98.

² See my paper on these castles in *Journal Brit. Archaeol. Association*, new ser., vol. xl, pp. 177–92; and, for Buckden, *ibid.*, 3rd ser., vol. ii, pp. 121–32.

³ See my paper in *Archæologia Æliana*, 4th ser., vol. xv, pp. 115–136.

Tantallon Castle, which was certainly in existence by 1374, shows in its tall central tower, containing a complete suite of apartments for the lord or castellan, pierced at ground level by the main entrance, the same idea, worked out in a simpler way. Caerlaverock, in its original form, illustrates the like thesis, more fully developed.¹ Tantallon, Caerlaverock, Doune, and Sanquhar, all alike are a product of identical conditions, of the time when a lord's power came to rest no longer on his vassals but on his armed retainers and mercenaries. This characteristic development of the later Middle Ages was as rampant an evil in Scotland as elsewhere, as the legislation of the Stewart kings, from James I onwards, amply shows.

The influence exerted upon the late mediæval castle plan by the advent of specialised mercenary warfare, and all the complicated evils summed up in England under the comprehensive term "livery and maintenance"—this "revival of anarchy in a civilised society"²—has hitherto not been recognised. Rightly appreciated, it affords the explanation of much that has seemed puzzling in the secular architecture of the fourteenth and fifteenth centuries. For example, the group of late tower-houses in England, already mentioned, which hitherto have been regarded as a kind of conscious architectural atavism—"a deliberate return to the donjon of earlier days,"³ now fall into their natural place, not as the product of a meaningless antiquarianism quite foreign to the spirit of their age, but as the most practical embodiment of urgent current requirements. The atavistic theory of these late tower-houses has reached its climax in the language of a recent writer, who describes that at Warkworth as "the finest tribute paid to the memory of the ancient keeps."⁴ Nothing is more certain than that the "stout Earl of Northumberland" would have kicked his master mason downstairs had he presented himself before his lordship with any such pious proposal. There is naught whatever of piety about the late tower-houses of England. Quite on the contrary, for the special needs of their time they are the most up to date and apposite thing that their builders could have devised.

It is extremely instructive to note the effect which the new problems of mercenary warfare exercised even on the most rigidly conventionalised castles in the world, those of the Teutonic Order to which I have already

¹ See my paper in *Trans. Dumfries and Galloway Nat. Hist. and Antiquarian Soc.*, 3rd ser., vol. xx. Cf. *Proceedings*, vol. lvii, pp. 29-40.

² G. M. Trevelyan, *Hist. England*, p. 259.

³ A. Hamilton Thompson, *Tattershall. The Manor, The Castle, The Church*, pp. 11-12; also in *Tattershall Castle*, by the Marquess Curzon and H. Avray Tipping, p. 182.

⁴ H. Braun, *The English Castle*, p. 56.

alluded.¹ Here the combination of the cross and sword, in the hands of the military monks, entailed a corresponding combination of the fortress and the cloister in their dwellings. Each castle was built to house a commandery of twelve religious knights, and so their design is rigidly claustral and their arrangements as highly standardised as those of any western monastery. But from the latter part of the fourteenth century onwards, the crusading fervour of the Knights of the Sable Cross began to wane, and they grew more and more to rely, for the maintenance of their power, upon mercenaries and upon the swarms of knightly adventurers whom the prestige of the Order, combined with the love of excitement and the hope of booty, induced to take service in the long series of campaigns against Poland and Lithuania. The result is strikingly seen in such a castle as Neidenburg, erected shortly before 1400. Here the concentration of the mass and weight of the building over the entry, and the provision in this part of a separate quarter for the commandant, who instead of being the provost of a fraternity of his fellow-knights, is now the chief of a gang of hirelings, is in all essentials the same as what we have seen at Pierrefonds and at Doune or at Caerlaverock. In these four contemporary castles, so widely separated in space, and so different in their political antecedents, we observe how the same results were produced by the same powerful cause.

I have to acknowledge that this paper has been prepared under a scheme of research supported by a travelling grant from the Carnegie Trust for the Universities of Scotland. The illustration at fig. 2 is from a hitherto unpublished drawing by the late Dr Thomas Ross, F.S.A.Scot.

¹ The standard work on these castles is Conrad Steinbrecht, *Die Baukunst des Deutschen Ritterordens in Preussen*, specially vol. ii. See also Karl-Heinz Clasen, *Die Mittelalterliche Kunst im Gebiete des Deutschordensstaates Preussen*, vol. i.

II.

THE ARMORIAL DE BERRY. (SCOTTISH SECTION.)

By J. STORER CLOUSTON, O.B.E.. F.S.A.Scot.

In the matter of ancient records of all sorts, Scotland may be compared to a traveller who has fallen among thieves so often that little of his luggage is left. All the more reason then to make the most of what has survived the perils of the journey; which is the excuse for this effort to treat, with more attention than it has yet received, one still existing heraldic record—the Scottish section of the French *Armorial de Berry*.

The good fortune of England in preserving so much of her past is nowhere more conspicuous than in her great collections of heraldic rolls or lists of nobles, knights and squires, with the arms they anciently bore, from the middle of the thirteenth century onwards. Ours in Scotland begin so comparatively late as the sixteenth century, and there is very little of definitely certain date then, till one reaches the 1540's. Before that period, however, some limited light is thrown by three of the great Continental armorials. The earliest is the collection of Scottish coats in the *Armorial de Gelre*, c. 1380; but they only number 42, and include but 22 separate families (*i.e.* with separate surnames) which can be identified with certainty. Moreover, these families, apart from the earls, come almost all from the east side of the country, mostly within a limited range of Edinburgh.

The *Armorial de l'Europe*, c. 1425,¹ has rather more Scots coats, 57 in all, but 5 of these have no names and it is impossible to be sure of the owners, so that only 33 separate families can be identified. They are rather more widely spread than in *Gelre*, yet they still come mostly from the same eastern counties (again apart from the earls).

The *Armorial de Berry* is the latest of the three (c. 1445, as will appear), and its proportion of those heraldic slips and errors only to be expected in a foreign work is somewhat higher, but in two very important respects its Scottish section is far and away ahead of the others. It is much longer, including 125 names (not counting one repetition presumably in error), and some 93 separate families who can with reasonable confidence be identified. Also, it has been deliberately designed to cover the greater

¹ The dates both of this *Armorial* and of *Gelre* can be told pretty exactly from internal evidence.

part of the country and display a representative collection of arms for all Scotland; and in actual fact, apart from one north-eastern area, it includes almost all the most outstanding families of the period. It will be found, moreover, to make certain contacts with history which throw some fresh light on shadowy corners. These features, together with its date—practically a century older than the first certainly dateable native armorials—give it a value and an interest to Scotsmen which has scarcely been realised.

It has already been reproduced in colour in Stodart's *Scottish Arms*, though with only the briefest accompanying text, little more than the identification of the often oddly spelt names, together with a few notes on some of them. Stodart's volumes, it may be added, are not very generally accessible, while their gigantic dimensions put them definitely outside the category of objects that can be man-handled with comfort.

Furthermore, his plates have not the advantage of photographic accuracy, as can be seen by comparing them with the illustrations which accompany this paper. Details of drawing, colours, and names all show a certain number of deviations; good though they are on the whole. For my own plates, I am indebted entirely to the generous interest of Mr Walter G. Grant, F.S.A.Scot., to whom I am under a deep debt of gratitude for providing the most interesting part of this article. I may explain here that the photographs were obtained through the Office de Documentation in Paris, and the correct tinctures given by their heraldic expert, who checked and when necessary corrected the outline tricks I sent him. He also sent me samples of the actual red and blue used in the *Armorial*; though it must be understood that these actually vary somewhat in shade, and that to reproduce such variations would entail far too costly a colour process.

On its artistic side, medieval heraldry is seen in an animated and, one may fairly say, a slap-dash mood. The quaint spirited lions, the admirable boar heads, the extraordinary conceptions of the griffin of Lauder, the unicorn of Kerr of Samuelston, the otters of Meldrum, the lion faces of Macgie, the parrots of Pepdie, and the other more or less successful endeavours to depict animal forms, are interesting and entertaining additions to the heraldic menagerie. As to the ordinaries—bends, chevrons, etc.—the paint was splashed on without a pause for measurement or the ruling of a line; to such an extreme in the case of the cross fleury of Carlyle that it would be unrecognisable unless one knew what it was. Nor did the artist even slacken his headlong career to make his shields approximately symmetrical. To this passion for speed must no doubt be attributed many, probably most, of the errors to be found in

the *Armorial*. On the other hand, one does get a liveliness denied, in this as in other matters, to the severely conscientious.

2.

Gilles le Bouvier, author of the *Armorial*, was a writer, herald, and traveller of no small distinction in his day. His life and works are treated at some length in M. Vallet's scholarly monograph on the *Armorial*.¹ From this authority we learn that he was born in 1386 of a minor armorial family in the province of Berry, set out into the world to make a career in 1402, became Berry King of Arms and premier herald of France in 1420, and served his master King Charles VII. faithfully and diligently in the capacities of envoy and agent as well as herald till his death in or about 1455. His travels took him all over Europe and the near East, and both his accounts of them and his historical works are highly praised by Vallet for their sagacity, impartiality, and cool judgment: while his *Armorial* was a really immense and heraldically most valuable undertaking. In his own preface to it, Bouvier narrates how he travelled through every *Marche* or district of France, collecting his material at first hand from the owners of the arms themselves, and we shall see clear evidence that he followed the same procedure in Scotland.

He adds in his preface, in case any be dissatisfied with the arms he assigns to them, that he was guided neither by love nor hate, but set down the arms exactly as they were given him. In other words, he exercised no official control but accepted the coats on the guarantee of their bearers: a valuable fact in connection with the question of official control of arms during the period when the arms-bearer was a formidable and frequently fiery warrior, and the herald a pacific officer dependent largely on the hospitality and largesse of his patrons.

From a critical examination of the original, together with Bouvier's own account, Vallet gives this interesting description of the premier herald's methods. The *blasons*, he says, appear to have been the direct and original work of the herald himself, the armorial being probably composed of separate "cahiers" (paper booklets) of sketches, "done on the spot and successively by the author. He himself, no doubt, having arrived at the *stations ou domiciles a lui personnels*, transcribed and re-touched, with the help, if necessary, of his heraldic painters and his pursuivants or assistants. Thus are explained, in our opinion, the

¹ *Armorial de France, Angleterre, Écosse, Allemagne, Italie, et autres puissances. Composé vers 1450 par Gilles le Bouvier du Berry.* Par M. Vallet (de Viriville). Paris, 1866.

inequalities of execution . . . the *blasons* unachieved, and the transpositions which several chapters present."

These last words refer to a not infrequent mix-up of folios, made in binding the *cahiers* together, such as one that occurs in the Scots section, where several folios of Norman arms interrupt the sequence of pages. Four "*blasons* unachieved" are also found among the Scottish arms.

Vallet adds one other point, the importance of which will appear later. Inclusion of the arms was voluntary, and "we must suppose also that a certain fee (*droit*), a certain charge (*taxe*), was the price of insertion; a charge paid to the profit of the herald, for whom the work entailed costly and constant travelling. This payment was a matter of right, according to the books of arms of the period, and entirely in harmony with the ancient traditions." (In a footnote Vallet cites various early authorities for this.)

Regarding the date of the *Armorial*, Vallet shows strong reasons for holding that a considerable part, at least, of the French sections or chapters (which include the vast bulk of the work) was done in the late 1440's or early 1450's, and that it ended with Bouvier's death in 1455. The foreign sections, however, might have been collected at almost any time after 1420—or even before, and only in a few countries is there evidence for dating. In Scotland there is none, apart from internal evidence, and Stodart's date, 1450–55, is merely Vallet's estimate of when the whole *Armorial* was completed. I may add that the period 1440–48 is a particularly probable one for Berry's foreign armorial journeyings, since his name is not found in French records during those years.

3.

Coming now to the Scottish arms-bearers, they number, as was said, 125, and consist of 15 earls, 101 barons or greater lairds, and 9 individuals. In their arrangement one sees a marked advance on the more haphazard methods of the two earlier armorials. Both in *Gelre* and *Europe*, though a batch of earls comes first, others appear later mixed up with the baronial arms, while the legends sometimes give the owner's christian name and sometimes not. Berry's mind was orderly and (for that period) precise. The earls are confined to 5 rows at the beginning, and the christian names to a group of 9 all together at the end. The earls' arms are each labelled "Le conte de" So-and-so, and almost all the others "Le sire de" or "Ceulx de" (those of), followed sometimes by the surname, but more often by the name of the estate (there appears to be no definite distinction

between these designations "sire" and "ceulx"—or anyhow no consistent distinction). A few others are styled "Monsieur de". This last title is interesting. It is used nowhere else in the *Armorial*, and from that fact alone the peculiar Scots title "Master of" is suggested. A detailed examination in each case where evidence is available not only puts this, I think, beyond reasonable doubt, but gives valuable help in dating the Scottish section.

As was just pointed out, one has to seek this date in such significant heraldic and other facts as can be discovered within the *Armorial* itself; and the following items seem, between them, to provide pretty definite evidence on the point.

1. It cannot well be earlier than the creation of the short-lived earldom of Ormond in 1445, or later than its extinction in 1455 (which was also the date of Berry's death), though since there appears to be no record of the creation, merely the first appearance of the Earl of Ormond in 1445, a year or so earlier is just possible.

2. The inclusion of no fewer than three Livingstone and three Crichton coats not only shows that the date coincided with the rivalry of those two houses, but seems to make it definitely before January 1449-50 when the Livingstones crashed, and Berry would no longer be apt to put in three of their armorials.

3. The arms of Lyon have a baston or bendlet gules. This appears in the seal of the father of the first Lord Lyon who died in 1435. But it is not in the seal of the son, appended somewhere between 1435 and 1445; nor does it ever in fact appear again.¹ In 1445 this son was raised to the peerage, and it seems unlikely that Berry would include the baston in the coat of "Le Sire de Lion" after that year. 1445 would seem in fact to be both the earliest and the latest date possible—or at all events probable—on the actual evidence so far considered.

4. The evidence supporting the view that "Monsieur" must surely mean "Master" consists of a number of facts showing that, in five cases out of six, there actually was a Master c. 1445, who was of full age and responsible position, and who might quite well therefore, for one reason or another, have had his own arms entered in place of the head of the house, to whom he was heir.

It would be going too far afield to enter at all fully into the question of the early usage of this designation, but since it is one of the matters on which the *Armorial* throws a ray of historical light, I may say here that Mr Thomas Innes of Learney, Albany Herald, has kindly and very thoroughly gone into the matter with me, and agrees in the first place,

¹ See *Scottish Armorial Seals* (Rae Macdonald) for all these seals.

that "Monsieur" must be taken to represent Master. He further rejects the suggestion that at that date the term might have been used loosely of the eldest son or heir of a baron below the rank of Earl or Peer of Parliament. These *Monsieurs* of the *Armorial* must therefore have been the heirs to peerages; from which it follows that several Scottish families were at least created Peers of Parliament at a considerably earlier date than has hitherto been known: even though, for one reason or another (probably the trouble and expense entailed), they backed out of the dignity and are not found as peers in any other record. As will be seen, this would apply to the families of Oliphant, Wemyss, and Murray of Tullibardin, on the evidence of our *Armorial*. These are Mr Innes's opinions. His reasons were very fully stated, and I for one would accept his authority on the question.

Returning to the facts supplying evidence both of date and of the identity of "Monsieur" with Master: Patrick, Master of Gray, eldest son of Andrew first Lord Gray, was married in 1440 and married a second time before 1445, so that he was certainly old enough to appear in the *Armorial* then, with some years to spare. This applies also to Patrick Ruthven of that ilk who was Sheriff Depute under his father Sir John Ruthven, Sheriff of Perth, in 1444. Similarly, the Master of Forbes appears in Parliamentary records in 1445, and succeeded his father in 1448; facts which in themselves point to a date for the *Armorial* before the latter year. As for Monsieur de Rues (Rires), Sir Thomas Wemyss of Rires succeeded his father Duncan before 1443; this Duncan being elder son of Sir John Wemyss of Wemyss. The principal family of Wemyss, however, descended from David, younger son of Sir John, and David's son John, who succeeded c. 1430, only came of age c. 1446. Consequently Thomas Wemyss of Rires was next heir and presumably Tutor of Wemyss in 1445.

Though the Murrays, like the family of Wemyss, are not previously known to have held a peerage till long after this period, it is a coincidence which now seems not without significance that Sir David Murray's estate of Tullibardin, Gask, etc. was erected into a barony in 1443-44, while Sir David's son and heir William is considered to be probably identical with William Murray, arbiter between Lord Ruthven and the town of Perth in 1442. Again we have a Master of sufficient age and responsible position.¹

As will be seen later, "Monsr de quohon" is pretty certainly a mistake,² and the only remaining Master is Monsieur de Quili, a designation which

¹ All the above evidence is from the *Scots Peerage*.

² I.e. "Monsr" itself is, with little doubt, a mistranscription. See next section.

can now be read as Archellie, part of the estate of Lord Oliphant. Here alone the evidence presents a difficulty. Sir John Oliphant died in January 1445-46, and Lawrence his heir was then a minor and only came of age c. 1450.¹ Whether there may perhaps be an explanation on the lines of Wemyss of Rires, I am not aware. Or again, the foreign herald may be responsible for some inconsistency. Lawrence may have been the Monsieur even though under age in 1445. In any event five out of six cases accord with the reading "Master," and are also consistent with a date round about 1445.

5. Later on, in dealing with the 9 individuals at the end, the very year 1445 gains added significance; though certain facts strongly suggest later additions.

Taking all the evidence together, 1445 stands out as the most probable year in which at all events the main bulk of the information was collected, with some items added later, and perhaps the lapse of a few years before the coats were painted in their final form.

4.

The next question concerns the accuracy of Berry's Scots arms, both as to heraldry and names.

Taking the names first; an examination of the so-called "facsimiles" in Stodart leaves an impression of a handwriting so bad and misspellings so extraordinary as to make one wonder how far those names are to be relied on. But when one sees the photographs one discovers that the writing, except where it has occasionally faded, is quite bold and legible. The facsimiles, in fact, not being really done by a mechanical process, but by careful tracing by hand, have the defect of all tracings. They tend to make a handwriting look "spidery," and, especially where it has faded, produce a totally wrong impression. Moreover, they are by no means all correctly shown in *Scottish Arms*. From the photographs it has been possible to correct a number of them, and this again has facilitated the reconstruction of the names. For the readings given here I am indebted to Mr William Angus and Mr H. M. Paton of the Historical Department of the Register House, and I may say that in every case I have accepted their opinion: though at the same time I must add that their readings were corroborations, or sometimes corrections of my own, and the responsibility for them is entirely mine.

As for the misspellings, one must first allow for the almost purely phonetic efforts of a foreigner to tackle Scottish names, and for his use of

¹ *Scots Peerage*.

qu to represent the sound *k*, and then realise that these names, as we have them, are evidently copies of those in his first rough notes, and the mistakes usually due either to misreading or careless copying.

That this is undoubtedly the case can be shown by a few examples. For instance, Carrick appears as "quant" (with "fic" scored out before it). Even a foreigner would never make such a mistake except by misreading an already written "quaric," which could very easily be done. Similarly "morat" was clearly "morai" in the first note, "beue" was "leue" or "leus," and "mandoel" was "macdoel," or perhaps "maicdoel." These are evident cases, and I may add that even the French names sometimes show the same sort of error, clearly due to misreading an original note; *e.g.* "Pestiman" for Pestivien, and "Pruscalet" for Pluscallet.

Instances of names a little more difficult to reconstruct are "bouesel" for Duchal, where *d* has been misread as *b*, a fairly common error; "nesegles" (tresegles) for Terreagles; "de bes" (veg or vec) for Dunvegan, and "du lar" for Dunbar, where an original "dun" has been misread as "de" in one case and "du" in the other.

Other cases will be mentioned later, but these samples serve to show the kind of error frequently found, and its usual source—the misreading of an original note. Contractions are also met with, while occasionally a mistake seems to have arisen where the original name has been corrected by scoring out one or two letters, and then copied uncorrected. In one or other of these ways it is usually possible to explain such misreadings as "fic" for "fif" (Fife), "saincton" for Swinton, "losec" for Leslie, etc. One result of this investigation is to raise a suspicion that the copying of the names was left to a "pursuivant or other assistant."

Once or twice one finds mistakes in the attribution of names to coats. On Pl. VIII. it will be seen that "tranquart" (Cathcart) has been written over two shields, the right one and that of Kennedy of Blairquhan, while "blairian" (Blairquhan) is over Kirkpatrick. Two other puzzling legends seem due to a curious error of exchange. The unmistakable quartered coat of Ogilvy of Auchterhouse (Pl. VI.) is labelled "Monsr de quohon," while the equally unmistakable ermine, fretty gules of Macculloch (Pl. XII.) is styled "ceulx de boisglaiui." It took a long time to realise that, to all appearances, the names have actually been interchanged; "Monsr de quohon" being a mistranscription of "macqulou," or something like that, and "boisglaiui" a mistranscription of "d'oisglaiui." It may be added that on Pl. XIII. two shields are without a legend at all, but fortunately the arms are again unmistakable—Rait and Monipenny.¹

¹ In M. Vallet's *Armorial de France*, etc., these two coats are included in error among the arms of Normandy (Nos. 671 and 672).

In the matter of heraldic errors, these, as already hinted, may, as a rule, safely be put down to overhaste. They consist mainly in the omission of charges, such as the ribbon of Abernethy in the coat of the Earl of Crawford, the three stars in Lindsay of Byres, the engrailed bordure in Gray, the tressure in Lyon, and the annulet in Maxwell of Pollock; together with such errors as the crosses placed on the crescents of Cathcart instead of above them, and the escutcheon instead of voided escutcheon of Rutherford. One also has at least one definite error of addition, in the ribbon put in the second and third quarters of Wemyss of Rires. And various other mistakes, greater or less, will strike heraldic critics: some of which will be referred to later.

But at the same time one must beware of assuming an error when some dissimilarity from the orthodox arms appears. The evidence of early seals sometimes definitely supports Berry as against later recognised forms; as, for instance, the chevron and boar heads of Buchanan (Pl. VII.), the tressure of Murray of Cockpool (Pl. VII.), and the chevrons of Scott of Balwearie (Pl. XII.) and Glen (Pl. XIII.), where in the books lion heads and martlets alone are given.¹ In view of these last four cases, where Berry certainly was justified by the early evidence available, one realises that his *Armorial* sometimes provides valuable evidence as to the form in which arms were actually borne at dates earlier than those covered by official records.

When we come to his colour deviations from orthodoxy, the same question arises—is he simply wrong, or does he show the colours as they really used to be? Here seals, of course, are no help, and one can only say, on the one hand, that his tendency sometimes to reverse the colours of field and charges—as in Kirkpatrick, Melville, and Harcarse, and his red for blue and black for red in the well-known arms of Montgomery and Menzies—must be put down to sheer error; and, on the other hand, that the various Scottish coloured armorials are often themselves contradictory (see Nisbet for instances of this). Hence, just as in the case of charges, he may sometimes be giving the true colours as used in his day. In one particular, however, he certainly was apt to make mistakes, for Vallet specifically says of his French arms that he frequently confounds black and blue. One must therefore always make allowance for this. The black field of Murray of Gask, for instance, and the black boar heads of Cochrane, may simply be disregarded as evidence of colour. Nor, it may be added, need the bear heads of Forbes, caboshed instead of coupéd, be taken as anything more than a slip on the artist's part.

Later on, various cases will be referred to in more detail, in which

¹ See their seals in *S.A.S.* for evidence in each of these cases.

Berry would seem to have had grounds, and perhaps strong grounds, for displaying unfamiliar colours or charges. Here it may be said generally, as some guide to forming an opinion, that the nett result of the various departures from recognised heraldic orthodoxy in the *Armorial* is to leave an impression of considerable licence and frequent changes in earlier Scottish heraldry; and that impression, it may be added, is strengthened by a study of Rae Macdonald's *Scottish Armorial Seals*. We have Berry's own assurance, already quoted, that he himself took the arms as he found them, in France anyhow, and one must presume that in Scotland he also consulted the susceptibilities of his warlike patrons, and certainly made no alterations that might displease them. But this is not to say that he might not occasionally gratify them by making an addition pleasing to my lord. There is one actual case, inexplicable on any other hypothesis, and very curious in itself.

This is the appearance of a galley in the arms both of the Earl of Angus (Pl. IV.), and the "Sire de Grain"—*i.e.* Graham (Pl. VII.). In the first case it is blue and replaces the red heart of Douglas: in the second it is red on a gold field, with three black escallops in fess above. This last coat, it is to be particularly observed, is evidently that of the Grahams, claimants to the earldom of Strathearn and afterwards Earls of Menteith, since the escallops are not on a chief: see Nos. 1107 and 1108, *Scot. Arm. Seals*. This Berry coat is exactly like the second of those in particular, with the escallops moved up to make room for the galley below. Neither Douglasses nor Grahams ever bore a galley, nor is it found in any other coat representing the earldoms of Angus or Strathearn. There seemed, in fact, to be no conceivable reason for its appearance.

The explanation (if my reasoning is right) is interesting and illuminating. Only one other galley appears in the *Armorial*, and that is in the first and fourth quarters of the arms of William Sinclair, Earl of Orkney (Pl. IV.), where it represents his island earldom, and when one remembers that the two previous lines of Orkney earls were actually the houses of Angus and Strathearn, it is difficult to regard these three appearances of the galley as unconnected.

Now, at that very date William Sinclair's right to the earldom of Orkney was being challenged at the Danish court, and in either 1443 or 1446 there was issued at Kirkwall the well-known Diploma, setting forth the evidence for Sinclair's claim, *via* the lines of Strathearn and Angus.¹ Charles of France was nearly akin to King Christopher of Denmark, and naturally highly influential at his court, Berry was Charles's premier herald, and Earl William himself was keenly interested in heraldry. He

¹ Printed in the *Bannatyne Miscellany*, vol. iii.

was, indeed, its only patron in Scotland at that period known to record. Our first Scottish treatise on the science was written at Roslin Castle by Sir Gilbert le Hay at the Earl's special request.

The appearance of the galleys in the Angus and Graham coats may thus be read as instigated (and handsomely paid for) by William Sinclair in order to supplement by heraldic demonstration, *via* Berry and his royal master, his claim to the earldom of Orkney. Certainly this line of reasoning explains what is otherwise a complete mystery. It is, moreover, to be observed that the other two arms-bearers could feel nothing but gratified by having this record of former dignities added to their arms.

5.

Considering the problems that were set him by so many of the names (not so difficult to read once you know what they ought to be, but a very different story for the first man in the field!), Stodart's identifications of the coats are remarkably successful, and his judgment was extremely sound. Later investigation, however, has enabled corrections to be made, or uncertain coats to be identified in five instances.

The name "Le Conte de Surdelle" (Pl. IV.) naturally seemed to be intended for the Earl of Sutherland, but the blue field with three white lions is so utterly different from the Sutherland red field with three gold stars that Stodart suggested a confusion between that earldom and Ross—with the colours beyond the reach of explanation.

The true reading of "Surdelle," however, may, I think undoubtedly, be seen by comparing it with "dilles" (d'illes) above. It must contain the same word "island," while "surd" can well be a corruption of Sodor, the old name for the Hebrides, still found in the title Bishop of Sodor and Man. The "Earl" of the Hebrides-isle was, of course, Macdonald, Earl of Ross and Lord of the Isles, and now one sees how the three lions of Ross reappear in error, instead of the galley of the isles. With both titles, one arms, and the colours of both coats all wrong, "Le Conte de Surdelle" was pretty thoroughly disguised, but I believe he can now be safely identified as that turbulent magnate, the Lord of the Isles.

These two coats of Ross and the Isles, and the confusion between them, are Berry's worst mistake; and the explanation of it, I think, must be that he never visited the far north personally, but simply put in these coats from hearsay, as being of such importance that he considered they should be included. One is reminded of the oriental potentates whose fabulous arms the heralds of old thought essential in any respectable armorial.

The arms of "cranoc" on Pl. VI. were attributed by Stodart to

Gourlay of Kincaig; the proper colours being reversed. In addition, however, to this colour mistake, and more important, the word Kincaig, even in the form "Kincroc," is exceedingly difficult to convert into "Cranoc," as can be realised by trying the experiment. Cranoc is in fact a most unlikely corruption, and I am indebted to a suggestion by the Lord Lyon for what I think must be the true solution—Carnegy. This could easily become Cranocy, while, as has been pointed out, a black charge can always be read as blue. One is then only left with the field wrong; argent instead of or, and there is more than one instance in Berry of these metals being confused: *e.g.* the fretty of Lyell and the field of Jardine.

The coat labelled "quoquenton" (Pl. VII.) was attributed to Moffat; but there is no known connection between the Moffats and any place resembling this, while their actual arms, as given by Nisbet, have the colours of field and charges again reversed. As they actually stand, the arms are the original coat of Johnston (see Nisbet), only without the cushions on the chief, and since there is no evidence of the Johnstons bearing cushions before the sixteenth century, and the Kirkpatricks certainly did not add theirs till after 1357,¹ the coat is inherently more likely to be Johnston. This is all the more probable since the families of Dumfries and Galloway in the *Armorial* are such a particularly representative collection that the Johnstons are very much more likely to be included. Indeed it would be surprising if they were not. As to the name "quoquenton," if one spells it "Cockenton," and then supposes a bent *l* has been read as *c*, and *r* as *n* (both quite possible mistakes), one gets Lockerton, a by no means improbable French version of Lockerbie, one of the Johnston headquarters. This suggestion at least shows that there is no inherent difficulty in the way of accepting a Johnston attribution for this shield.

The coat on Pl. IX. assigned to "bediton" was left by Stodart as uncertain, but it can now be confidently attributed to Maitland of "ledition"; *i.e.* Ledington or Lethington. Robert Maitland of that date was son of Agnes, daughter of the Earl of Dunbar, and this Robert was given the custody of Dunbar Castle by his uncle.² Thus the red roses and white bordure of Dunbar are explained, while the rest is the proper Maitland arms, or a lion gules. The roses should presumably have been properly placed in the bordure.

On Pl. XIII. will be seen a shield labelled "ceulx de lorn," showing a quartered coat. The first and fourth quarters, or a chief sable, cannot

¹ Kirkpatrick seals in *S.A.S.*

² *Scots Peerage*.

be identified and must surely be an error. In the second and third the bend has lost all its colour save a few scraps of blue paint, and charges might quite well have been borne upon it once. If these were three mascles, the arms would be Haliburton, and though this is undeniably a shot at a venture, "de lorn" could certainly quite well be a corruption of "dirleton," and no other reading is apparent which could possibly fit the arms. Hence with considerable confidence I would advance Haliburton of Dirleton as the proper family here.

A sixth shield, that of "maquele" on Pl. VI., is so dubious that it would be rash to do more than suggest as a possible solution the family of St Michael, one of whose branches bore argent, a chevron between three cushions sable.¹ Cushions are occasionally shown like this, though not in the two other cases in this *Armorial* (Dunbar of Mochrum and Kirkpatrick). This suggestion is only advanced owing to the complete dearth of any alternatives, and it is advanced with no confidence whatever.

6.

There remain a few other coats which, for one reason or another, call for some special comment.

Of the earls' coats in general (Pls. IV. and V.), it may be mentioned that most of the Scottish earldoms were at that time in the hands of the Crown, largely through the high-handed operations of King James I. Of the rest, though Ross was held by the Macdonalds and Mar by the Erskines, the arms of neither family are quartered with their earldom arms. No fewer than four were held by the Douglasses—Douglas, Angus, Moray, and Ormond; Crawford was held by the Lindsays, and Orkney by the Sinclairs. It is characteristic of the times that this last, though really a Norse dignity, should be included in a Scottish roll of arms.

The peculiarly shaped roses in the Lennox coat are evidently what are styled "carrées ou Anglaises" roses when they occur in the Norman arms of des Grages in this same *Armorial*. The still more peculiar first and fourth quarters of Moray, however, quite defy elucidation. Stodart suggests that the intention apparently was to depict Randolph—a tressure and 3 cushions, and when only the first was done, the red saltire was painted on top. So far there seems to be no other explanation; though this, of course, does not explain why that happened.

The very first of the baronial arms, Swinton on Pl. V., has two puzzling features. Why should this family, ancient though they were, take the lead, ahead of a string of the greatest baronial houses in Scotland, seven

¹ St. Michael of Bramson (Nisbet).

of them on that same page being either Peers of Parliament already or shortly to become so? And why should Swinton have entirely wrong colours—a white shield with red charges, instead of a black shield with gold and white?

The only answer apparent—which covers both features—is that this Merse or Berwickshire coat is placed beneath that of the Earl of March (the Merse) who heads the row above, and that it is given the Dunbar colours as those of the feudal superior. Furthermore, it is to be observed that the boar heads are placed in the unusual position of “erect,” thus “respecting” the coat above.

In more than one of the *marches* into which the French arms were divided, there are evident indications (seen in the charges of the coats) of a connection between arms in the same perpendicular column, even when not on the same page.¹ Very far from all the coats are thus connected: that would require infinitely too much time and trouble, but the herald seemed to use this method occasionally. In our Scottish section all the boar heads are erect (save in the last coat, which, as will appear, was added later), while the other animal heads, when not full-faced, look upwards, suggesting the same principle at work. And the following three cases may all be explained on the same lines as Swinton.

On Pl. XII. the arms of Baillie of Lamington show six red roses in a white field, instead of white stars in a blue field: at first sight a bad error. But before acquiring Lamington, these Baillies were of Hoprig in Berwickshire, close to the ancient Dunbar fortalice of Cockburnspath, and here one has not only the Dunbar colours, but their very roses. Again the arms are in the first column, headed (on Pl. V.) by the Earl of March.

On the same Pl. XII. Buchan has the colours of the earldom of Buchan, gold lion heads in a blue field, instead of red or black heads in a white field, and is in the same column as “Le conte de boquan.”

On Pl. VIII. Kerr is black and white instead of red and white, or green, white and black. For black read blue, and both colours and charges are those of Douglas, lord paramount in Roxburghshire. And again Douglas is in the same column.²

In all these cases, the column is the same column 1, and a linking together of arms in such a very involved and unclear way admittedly may seem more fanciful than probable. But this method certainly seems to have been used sometimes with the French coats, and even if the

¹ This is best seen in the arms of the “lignages” of Metz in Lorraine. It is also pretty evident in Provence, and to some degree in Poitou.

² The inscription over the Kerr shield, “ceulx de Moncastel (or Moucastel),” is puzzling. The original Kerr lands lay in Morebattle parish, Roxburghshire. This comprised the ancient parish of Mow, and a vanished stronghold there called Mowcastle suggests itself as a possibility.

appearances in the same column here be mere coincidences, the actual facts with regard to colours and charges in these last four cases are very striking.

On Pl. V. the arms of Stewart of Darnley have the bordure with buckles round the wrong quarters, 1 and 4 instead of 2 and 3. The family also appears as Le Sire d'Aubigny among the arms of the *marche* of Berry, with the same mistake. There they are also given a cotice gules over all. The or and azure of the fess checky is, of course, a mere error for argent and azure.

On the same plate an extraordinary confusion will be seen in the arms of Pollock. They ought to be vert, a saltire or and three hunting horns argent. Apparently Berry has confounded these with the arms of Maxwell of Pollock, and started off with argent a saltire sable. Then, realising his mistake but having no note of the proper arms, he has adapted them to the name of Pollock by the addition of canting charges—a pollock fish and three *poulets*. This effort runs "Le conte de Surdelle" pretty close for the wooden spoon.

According to the books, Leslie, on Pl. VII., should have Abernethy in 2 and 3—or, a lion gules with a ribbon sable over it. But out of 9 Leslie seals in *Scots. Arm. Seals* with this quartered coat (6 being of the Rothés family), not one has a ribbon. It seems therefore impossible that these quarters were Abernethy originally. The arms shown by Berry, a black lion in a white field, are those of Mowat, and seeing that the Mowats of Buchollie and Leslies of Leslie were both Aberdeenshire families, the *Armorial* is in all probability quite correct. Evidently, one would say, Abernethy was introduced at a later period. We have here one of several pieces of evidence showing that sometimes apparent mistakes in Berry actually show early usage.

Plate VIII.: there seems to be no known explanation of the appearance of the Lindsay quarterings in the arms of Herries of Terreagles. Yet their addition is hardly likely to be a mere mistake.

On the same plate appear the mysterious arms of "Vedenmeton": clearly a branch of the Campbells, but otherwise obscure. It was the fact that the contemporary Sir Duncan Campbell, second son of Sir Colin, first of Ardkinglass, and ancestor of the Ardentinnny line, was a Knight of Malta—which might account for the crosslets; and also the difficulty of seeing any other possible reading but "Ardenmeten," that suggested this solution. On putting the point to the Duke of Argyll, whose knowledge of Campbell history is unrivalled, his Grace kindly went into the matter, and fully agreed with my suggestion. Hence I offer it with increased confidence.

The arms of Blackwood on Pl. IX. present a puzzle which I have been

quite unable to solve. There would seem to be no family of Blackwood in a prominent position at that period. Nisbet only mentions a minor Fife family from which came Adam Blackwood, defender of Mary Queen of Scots, who acquired a French estate late in the sixteenth century, and to this family he gives the arms, argent, a saltire and chief sable, the last charged with 3 leaves of trees or. At the same period, however, William Blackwood, Vicar of Duddingston, appended a seal with the arms, a fess between a star and crescent in chief and a mascle in base,¹ which pretty closely resemble those in the *Armorial*. The Irish Blackwoods use *both* these coats, which merely deepens the darkness. On the other hand, the likeliest family is Weir of Blackwood, since their estate (which they held well before the date of the *Armorial*) was not only the most important of the name, but lies in Lanarkshire, and the immediately preceding and following arms all come from that neighbourhood. But unfortunately the Weir arms are quite different from these, and they did not acquire their estate from the Blackwoods, but from the Church. Under the circumstances one can only say that the coat in Berry must have belonged to one or other of those families—Weir or Blackwood.

Also on Pl. IX., the arms of Livingstone of Callander have the second and third quarters, for Callander, curiously distorted. Instead of sable, a bend between 6 billets or, the billets form a compony pattern on the bend. This is certainly not due to hasty drawing, since it is a much more complicated bit of work, but presumably to the original note of the arms not being clear enough.

On Pl. XI. the arms of "bel" must be those of Dunbar of Biel. They are the same as those of "Patry de Dombar" in the *Armorial de l'Europe*, c. 1425, who may pretty safely be identified with Sir Patrick Dunbar of Biel, ambassador to England in 1423; except that his (in *Europe*) have the field or and the charges vert. But these are incredible colours for a Dunbar coat, and doubtless Berry's can be accepted as correct.

The two Monipenny coats on Pls. XII. and XIII. are dealt with in the article by Mr Albert Van de Put on the Monipenny Breviary in the *Proceedings* for 1921-22, and an account of Sir William Monipenny, afterwards Lord Monipenny, will be found there. He is styled here "Le Sire de Menipegny," and it will be seen that the dolphin in his first and fourth quarters is markedly different from that charge as shown in Stodart—an instance of the necessity of photography if absolute accuracy is to be secured.

¹ S.A.S. The date was 30th October 1584. There are no fewer than four places called Blackwood in the *Ord. Gazetteer for Scotland*, all described as estates: in Lanarkshire, Renfrewshire, and Dumfriesshire (two). (*Later*) Francisque-Michel in *Les Ecosais en France* gives the French Blackwoods, az. a fess or between a lozange arg. and a star or in chief, and a crescent arg. in base; quartering gu a stag head coupé arg. (Reid.)

Finally, it will be seen that the shield of Scott of Balwearie on Pl. XII. has had the legend above it scored through. This, however, was apparently accidental, as the name is evidently meant for Balwearie.

7.

On going carefully through the *Armorial* with an eye on the locality of the barons' and lairds' estates, one feature becomes early apparent, and that is the large batches of consecutive names from the same part of the country. This feature is not seen in the earls' names; naturally enough, since their estates were usually widespread; but beginning with Stewart of Darnley one has a run of eight west country names, and then come five from the east side north of the Forth. A little later on, beginning with Murray of Cockpool, comes a run of seven from Dumfries and Galloway. Further on, beginning with Sandilands, no fewer than sixteen consecutively belong to the Lothians, or in one case (Cockburn) only just outside. Other shorter runs from one district or another will be found here and there, and there can be no doubt, from this evidence alone, that Berry toured the country, as he did in France, collecting arms first from one district and then from another.

A certain number of names are isolated from their geographical neighbours. Some of these may well have been picked up at odd times, say when the herald was in Edinburgh, though, on the other hand, it is likely enough that the arms got more or less mixed up when the final work was being done in France.

The two coats of MacLeod, the Lewis branch and that of Harris or Dunvegan, are of particular interest in this connection. Unlike the Macdonald arms, they are quite correct, though they came from an equally remote region. How this happened one can only guess, but perhaps an odd time pick-up is the likeliest explanation. One thing, however, seems clear: the Lords of the Isles and the MacLeods were at that time definitely accounted the greatest Hebridean families; the two whose arms should be included in a representative Scottish collection. In fact, apart from the Campbells, they are the only purely Highland or Island families in the *Armorial* (counting only the then Scottish islands).

It is a fact to be noted that the total number of barons and lairds is 101,¹ which points distinctly to an intention of collecting a hundred as nearly as possible. Moreover, they work out as approximately a quarter of that total from the west, from the east south of Forth, and

¹ This is not including the second appearance of Colville on Pl. XIII. No arms are shown, and I have assumed it to be a repetition in error.

from the east north of Forth, with most of the remaining quarter from the south-west and western Border country. This is only very approximate, but it does distinctly suggest that Berry (who was an enthusiastic geographer) aimed at more or less equal quotas of arms from the natural divisions of Scotland. This, I think, can pretty safely be accepted on the evidence as one of the principles guiding his selection.

In itself, this systematic collection of arms on a geographical basis adds value to the *Armorial*, and the value is increased by an evident endeavour to have the collection representative of the greater families and most responsible and outstanding men of the day in Scotland. The number of Livingstone and Crichton coats alone makes this purpose plain. Further, on careful examination it will be found that nearly a third of these 101 baronial families either held a peerage then or became peers (Barons of Parliament, or in a few cases Earls) before the end of the century—and that at a time when the Scots peerage was extremely limited, and, in fact, outside earls, only just beginning. Also, a high proportion of the names on the Parliamentary and General Council records of the period appear in the *Armorial*, while the number of arms-bearers known to have held such offices as Sheriff, Warden of the Marches, Justiciar, Chamberlain of Scotland, and Ambassador is considerable, and would doubtless be much augmented if more national records were available. And the significance of the two MacLeod coats has already been mentioned. The *Armorial*, in fact, gives us a very good idea of who was who in Scotland at that period, and it will be found interesting to note how high a proportion of the names are still borne by landed families. The contrast with England, where the old feudal families were so largely replaced by new men in Tudor times, and the names found on old rolls of arms have only a minute proportion left to-day, is very striking.

There are, however, a number of notable omissions in a representative roll of Scottish arms, such as the hereditary constable and the hereditary marshal: and here one strikes another principle, characteristic of the financially prudent race to which the herald belonged. We have seen that a fee was a condition of insertion in the roll, and to secure the fee from a member of an equally prudent people he obviously had to collect it in person. At the same time the cost of a too extensive tour would seriously diminish his profits. Hence no doubt the fact that his north of the Forth quota was largely drawn from the convenient county of Fife, while the country north of Angus has a mere sprinkling of names. Among the outstanding families omitted are Hay and Keith, the constable and marshal, Fraser, Abernethy and Gordon, as conspicuous examples; not

to speak of Irving, Innes, Grant, and various more from Aberdeenshire and the northern counties adjacent. That district, in fact, is the one area in Scotland to which Berry has done no sort of justice.

The same cause—the necessity of collecting his fees in person—presumably accounts also for a few conspicuous omissions in other districts, such as Sommerville and Boyd. If the lord of the castle were away from home, the herald would pass on.

There was, besides, one particular ground for inclusion, which brings us at once into the realm of history. During the whole period of Gilles Bouvier's active life and participation in the affairs of heraldry and state, England was his country's relentless and for a while triumphant foe, and Scotland her faithful and valiant ally. It was thanks largely to the powerful aid of the Scottish armies led by Buchan, Douglas and the other famous captains from over the North Sea, that France at last threw off the English yoke and struggled to her feet again. The herald must have known many of these men personally, and all the more outstanding by name at least: and it would be only natural if his selection of Scots coats was largely influenced by the service they had rendered to his country. How markedly this actually was the case can be seen by a comparison between the exhaustive lists of Scotsmen on record as serving in France or visiting France in some official capacity during that time of stress, given by Forbes-Leith in his *Scots Guards in France*, and the families whose arms are recorded in Berry's *Armorial*.

The following names in these lists are also found in the *Armorial*: the Earls of Buchan (Stewart), Douglas, Mar (Stewart), Moray (Dunbar), Orkney (Sinclair), and Wigton (Douglas). Also these other families: Bickerton, Buchanan, Campbell of Loudon, Carlyle, Colville, Crawford, Crichton, Cunningham, Fleming, Fockart or Flockart, Forbes, Forrester, Graham, Gray, Hamilton, Herries, Home, Johnston, Kennedy, Kirkpatrick, Leslie, Lindsay, Lyell, Maxwell of Calderwood, Meldrum, Melville, Montgomery, Murray, Normanville or Norvel, Ogilvy of Auchterhouse, Pringle, Rutherford, Seton, Scott, Sibbald, Stewart of Darnley, Swinton, Turnbull, Wardlaw of Torry, and Wishart.

Further, as showing how few of the Scots names famed in France Berry omitted from his *Armorial*, out of 14 knights and one esquire recorded as slain at the Battle of Crevant in 1423, the families of all but 2 are included; out of 19 captains who fell at Verneuil in 1424, all but 3; and out of 14 magnates who accompanied the Earl of Orkney on his voyage to France with Princess Margaret in 1436, the families of every one are entered.

We have here in these facts and figures striking evidence of the close

connection between the *Armorial de Berry* and those pages of history wherein are recorded the exploits of the Scots contingents who fought, and so often died, in France. Also we can now understand how certain families who never played a conspicuous part on the Scottish stage, and who have long since ceased to play a part at all, appear in this select company. Four Bickertons, for instance, three of them knights, fell at Verneuil; Patrick Fockart was Captain of the Guards and Seneschal of Saintonge; and more than one Normanville led his men on the stricken fields of France.

8.

But it is when we come to the 9 names of individuals at the end that the most remarkable evidence appears of the intimate relationship between our *Armorial* and not only the history of France, but one of her most typically national institutions, her army.

That there is some essential distinction between these 9 and the other names in the *Armorial* is evident from the mere fact that they alone bear their christian names instead of the "Ceulx de" or "Sire de" affixed to the others, and form, moreover, a definite group occupying the last three lines (Pls. XIII. and XIV.). For some reason individuals, not families, are here recorded, and the problem was to discover the reason. After an exhaustive search through Scottish records, in which I enjoyed the invaluable and most obliging assistance of Mr William Angus, Keeper of Records, only two of these 9 emerged as men who might perhaps be identified with the holders of offices sufficiently important to provide a possible reason for their inclusion; though, even so, it was not at all apparent why the herald should have selected them.

One of them, simply styled Abercromby, is beyond the reach of documentary research, since his christian name has been manufactured by dividing his surname into two—"Abre Commier." Moreover, his arms were added somewhat later, as shown by the use, in his case alone, of white paint for argent (which has now turned dark), instead of merely leaving the paper blank as in all the other cases,¹ and also by the differently drawn and placed boar heads. This, for the purpose of inquiry, reduces the individuals to 8.

Examining the six shields shown (three unfortunately being "blazons unachieved"), one valuable heraldic clue appears; and this is the vassal or official relationship to one or another of the greater nobles, indicated by added charges. William of Motherwell has a cinquefoil ermine

¹ Information from the Office de Documentation, Paris.

superimposed on each end of his cross moline (a most peculiar arrangement), and as the cinquefoil ermine is the unmistakable bearing of the Hamilton family, and Motherwell lies close to Hamilton, there can be no doubt he was a follower of Lord Hamilton. John Sempill's buckle, placed on a quarter *underneath* his chevron, can pretty safely be read as showing that he was in the service of the buckle-bearing Stewarts of Darnley and Aubigny, a Renfrewshire family like the Sempills; the extraordinary, if not unique, position of the quarter apparently indicating that it was not really part of his arms, but a kind of label affixed by the herald to show whose man he was. The odd position of William Motherwell's cinquefoils presumably has the same significance, and in the light of these two cases, the unheraldically minute star in William Crawford's arms may be taken to be another label—probably of the Douglas family.

The coupé saltire in base of Alexander Maquen strongly suggests another instance of the same thing. As there is no such name as "Maquen," or anything resembling it with arms at all like these, he may pretty confidently be counted a Muir whose name has suffered at the hands of the transcriber of the original note. If so, he is presumably identical with Alexander Muir on record as "bailie" or "seneschal" of Kirkcudbright in 1426¹ and 1429,² and "justiciare" in 1448,³ all under William Earl of Douglas, and also recipient in 1417 of the lands of Hershaw and Drumbog in Lanarkshire from Earl Archibald.⁴ As the Earls of Douglas at that period held the lordship of Annandale, the added saltire probably indicates his office under them. The error of making the field blue as well as the fess, and converting the edges of the fess into two red bars, is perhaps due to the sketch having been made from a seal in which the fess was not raised itself but indicated by raised edges which were mistaken for bars. The red border shows that Alexander was a cadet of the Muirs of Caldwell.

Of the rest, the Auchenlecks of that ilk in Angus were hereditary armour-bearers to the Earls of Crawford;⁵ while "Guille Cliston" can only be William Clouston, since there is no possible alternative surname (and confirmation of this will appear presently); and as William Thor-gilson or Clouston was Lawman of Orkney in 1422 and 1425 under Earl William Sinclair,⁶ yet another official relationship to a great noble is suggested. Thus six of the eight seem to have borne either this or a vassal sort of relationship to certain outstanding magnates of the day—

¹ *R.M.S.*² *R.M.S.*³ *Book of Caerlaverock.*⁴ *Douglas Book.*⁵ *Proc. Soc. Ant. Scot.*, 1916-17, p. 228.⁶ See *Proc. Soc. Ant. Scot.*, 1917-18, p. 185, for an account of his seal of arms. The forms Clistoun and Cliston are found in Orkney in 1655-71, the bearer having apparently sojourned long abroad (my own papers).

the Earls of Douglas, Orkney, and Crawford, and the Lords Hamilton and Stewart of Darnley. And if this be so, we can pretty safely take it that the same applies to the other two.

But why should these particular men have been selected for inclusion in the *Armorial*? The answer, discovered at last by a fortunate chance, will perhaps only be fully appreciated by those readers, not too modern in their tastes to be wearied by great literature, who have ridden to Liège with Quentin Durward and fought through its streets with Le Balafré. They were, in fact, members of that famous corps the Scots Guards of the French King. In the muster rolls published by Forbes-Leith seven of their names are there: Guillaume Craffort, Guillaume a Cluisson (Clouston),¹ Jehan Simple, Guillaume de Moudreville dit Clisdal (Clydesdale), and Guillaume Achlet (Auchenleck) of the *Archiers du corps du Roy*; and George Banathin and James Rooz of the *Hommes d'armes de la Garde du corps du dit Sire*.

These cannot be seven mere coincidences; they are our very men themselves. Nor can there be any reasonable doubt that the evidence of vassal or official relationship supplies the reason why these seven particular guardsmen were selected. The great nobles must have had a hand in the matter. Further, by a significant coincidence, the apparent date of Berry's visit to Scotland, 1445, was also the very year in which the French standing army was instituted, with the reorganised Gendarmes Écossais and Scots Guards as its two premier companies. Putting all this together, it would seem, with really very little room for question, that the distinguished herald and royal envoy combined his *Armorial* with some persuasive recruiting work. He would appear to have secured from certain Scottish nobles the promise of one or more men of family for the reconstituted Scots Guards, each accompanied, no doubt, by the five or so followers, such as obeyed Le Balafré; and this service to his country he acknowledged in his *Armorial* by entering the names and arms of these gentlemen, ticketed, so to speak, in such a way that their liege-lord would get the credit for his generosity.²

¹ "Actuissou" in the printed rolls; *l* having been read as *t*. I am indebted to the Office de Documentation for pointing this out to me. Some years later James a Cluizton, Cluizon, or Cluisson, is also several times misspelt Actuissou. The prefix "a" is the Scots "o'." and at one time or another in these muster rolls a great many of the Scottish territorial surnames have it affixed to them, and are misleadingly printed Abourdit or Abourdie (Borthwick), Alomesdel (Lumsden), etc.

² The earliest muster rolls, from 1449 on for some years, contain a number of foreign names, some evidently German. It is evident therefore that there was some difficulty, just at that period, in securing a sufficient number of Scotsmen of the right type for the Guards; for they had to be both well born and "real giants," as a contemporary observer describes them (*Scots Guards in France*). This fact accords remarkably with the evidence of the *Armorial* and helps to explain the recognition given to the assistance afforded by these particular Scottish nobles. The foreign element disappears later.

Of the seven, all but two appear in the earliest extant muster roll of 1449, and may reasonably be presumed to be in the missing rolls which no doubt began at the reorganisation of the Scots Guards in 1445. The exceptions are James Ros or Rooz¹ who first appears in 1450, and George Bannatyne who does not appear till 1452. Yet these two are in the first line of three. One must suppose, then, either that Berry knew they were going to join, or that all nine names were added a few years later than the rest: unless we are to redate the whole *Armorial*, and against this is the evidence already cited, together with the significance of the year 1445. Very likely both suppositions are correct, and one may also reasonably think that the whole work of putting the *Armorial* into its final form was only done some little time after the herald's Scottish tour.

The eighth man, Alexander Maquen or Muir, is not in the muster rolls, but there is a considerable collection of Galloway and Annandale names from his jurisdiction, including a quite remarkable number of south country Macs: Maclellans, Macmorans, Macgies, and Macauslands especially; also Macuiguen (McQuiggan), McCreary, Macharry, Macalem (McCallum), Macartney, Maclaie, and McClure. And Maxwells and Johnstons are strongly represented, besides one or two more from the same district. Moreover, there is a still more surprising collection of Orkney, and even Shetland names, chiefly Sinclairs, Cloustons, and Rendalls, but also including (either in the Guards or Gendarmes Écossais) various other distinctive Orkney surnames, such as Draver, Machin (Magnus) of Brogar, Arcus or Arcusson,² Arold (Harrold or Haraldson), and Omand, to cite some of the most unmistakable examples; and from Shetland, Acle (Aclay), Nysvenon or Nyffenain (Neven), and apparently Howich (Hawick). With little doubt William Clouston actually was the Lawman of 1425, since he was clearly an old, or at the least elderly, man in 1451, when he alone of the Archers du Corps got no horse allowance, but instead £100 "*pour lui aider a vivre et soutenir son estat*"—a veteran of standing evidently.³ He and Alexander Muir, as Lawman and Justiciary, may

¹ He is also once spelt Rose, and from these forms he would appear to have belonged to one of the families of Ross or Rose who bore water budgets, not to the three-lion Rosses.

² Printed Artus and Artusson; *e* having been read as *t*: a very common error everywhere.

³ Further evidence of his age is afforded by the note in 1462 on Donat a Clusson (presumably a younger brother) and another, who had ceased to be fit for service owing to their "*ancien aage et debilitation de leurs personnes*." In these notes on certain of the Guardsmen there are also to be found references to two more of the seven in the *Armorial*, showing them to be men of ability or position above the average. In 1476 Guille Craffort "*homme d'armes extraordinaire de la garde du Roy*" had lately been taken by the king "*oultre le nombre ordinaue pour le servir et soy tenir à l'entour de sa personne*." And in 1462 (vol. i), when the original element of men-at-arms had been separated from the archer guards and become part of the Gendarmes Écossais, a note refers to "*George Bannaytin escuyer de Royaume d'Écose, ayant la conduite de XIII hommes d'armes et XXXIV archiers*."

very likely, then, have taken out contingents from their jurisdictions at an earlier date: Muir subsequently returning home. Certainly Norsemen from those far northern archipelagoes and strange Macs from the wilds of Galloway are not inherently likely ingredients in the Scots Guards of the King of France, so that some special effort instigated by the Earls of Orkney and Douglas is very definitely suggested. There is not the same firm basis of recorded facts in the case of Alexander "Maquen" as with the others, but this solution appears far from unlikely.

The peculiar interest of this Scottish section of the *Armorial de Berry* can now be realised, in that it not only gives a representative collection of the arms of the greater families of Scotland in the middle of the fifteenth century, but is linked to the history of France in so far as it was nearly and most beneficially affected by the old alliance with Scotland. It may, indeed, be considered as to no small degree a tribute to the gentlemen adventurers from overseas who so valiantly helped France to regain her freedom and self-respect.

9.

A comparison between the types of arms in one country and another seems to have had little attraction for writers on heraldry, in this country at least;¹ yet it is pretty evident that one is bound to learn at least something thereby, and actually it will be found that the differences in type suggest interesting questions. In the dim beginnings of heraldry there was clearly some fundamental reason why in Central Europe (*e.g.* Germany and Poland) allusive charges, mostly animals, figured so largely, while in Western Europe (*e.g.* France and England) arms were mainly either founded on the ordinaries, or consisted of fields divided into stripes, checkers, lozengy panels, etc.; or of small charges usually of a mathematical form—circular, oblong, or diamond shaped, together with simple conventional objects such as stars and crescents. The follies and fancies of earlier heraldic writers, by giving recondite explanations of such simple charges as a fess or a pale, instead of using their eyes and observing that maritime flags are striped in exactly that way for the practical reason of distinctive visibility at a distance, obscured the subject with quite remarkable success. Though it is well enough recognised that the primary object of armoury was to make each captain in the field distinguishable by his followers and fellow-leaders (often at a considerable distance), not even yet has the pretty obvious conclusion been drawn.

¹ One must make an exception in favour of W. S. Ellis, who went into this feature in his *Antiquities of Heraldry*.

There is no space here to pursue this line of reasoning further, beyond suggesting that anybody interested in the subject would find it a profitable form of entertainment to take a selection of Bayeaux tapestry banners, early arms of a simple pattern type—to coin a useful word—(such as de Grey and Warren), and International Code signal flags, mix them up, and then see if he could tell which was which. If he remains of the opinion that heraldry took its origin from devices painted on the shield (practically invisible to any but the enemy in front of it), and at a date as late as its adaptation to the totally different purpose of sealing, he will have a gift for faith in traditional views denied to the present writer.

In a general way, Scottish arms are of the same type as English. But there are certain national characteristics, and this collection of 122 representative coats, almost all belonging to the greater or the most ancient families in the land, illustrates these excellently. The pattern type, quite meaningless, except where, as in the case of Stewart, it can be readily combined with an allusion, is prominent throughout; sometimes quite simple, as in Carriek, Strathearn, and Ruthven; sometimes with stereotyped small charges added, as in Douglas and Muir; sometimes composed of these last alone, like Seton and Livingstone (apart from their later tressures). But compared with *early* English arms, before heraldry had reached the new rich in Tudor times, one or two marked differences can be seen. For instance, out of the whole 122 shields, only 4 have two ordinaries of the same kind—two chevrons (twice), two cotices, and three bars; while in the 110 coats in the Falkirk Roll of 1298 there are 15; and this represents a fair average for English collections. Further, the English ordinaries frequently have engrailed or indented edges, whereas in this *Armorial* only 2 are shown, while another ought to be (engrailed bordure in Gray).

Again, the English coats are constantly powdered or *semée* with small charges—crosslets, billets, and fleur-de-lis especially; and in numerous other cases the definite groups of small charges—or even lions—run up to six. That in fact is the favourite number, and groups of three placed 2 and 1 are comparatively rare. There are, for instance, only 9 in the Falkirk Roll. The Scots shields in *Berry*, on the other hand, include no fewer than 41 with such groups of three, and only half a dozen with more (excluding four charges placed round a cross or saltire): none at all being *semée*. Furthermore, English armoury is rich in divided fields—checky, quarterly, barry, etc.: while Ruthven and Campbell are the only examples here.

The consequence is a very much greater simplicity, severity, and regularity of appearance in the Scottish coats. They would seem, in

fact, to characterise a race already destined to Presbyterianism, business habits, and a marked anti-decorative mentality. English armoury rather accords with the richness of cathedral and college architecture, and its shields, lavishly bespangled with small gold and silver charges (in the great majority of cases these were or or argent), remind one that on the south side of the Border a "real gentleman" is one who makes no parsimonious comments on the bill.

Another, and an interesting national difference, is to be seen in the matter of animal forms. The lion is almost equally common in both countries, and is far and away the animal oftenest displayed. In England, of other animals, the martlet alone appears at all frequently, and this curious little bird is practically only used in groups of at least six: whereas in these Scottish coats where it appears—Rutherford, Normanville, Cairns, and Glen—there are three in each case. One finds also a very few eagles, but, apart from these three, animal forms are almost negligible. In our *Armorial*, on the other hand, at least 16 different species appear in 47 separate coats: 5 (including the lion) more than once. A few make a canting allusion to the surname, but the great majority do not: and this is apart from the lion, which was very rarely used anywhere for that purpose.

A sufficiently kenspeckle animal form, such as a hedgehog or a stag head, would make almost as distinguishable a device on a fluttering banner as a barry or checky pattern, and could be quite as ancient a bearing.¹ (It may be observed that on the present line of reasoning, antiquity must be closely allied to utility, since the original purpose of cognizances was obviously to be of *use*—not merely to indicate gentility.) Even if an animal form was not quite as ideally distinguishable at a distance as a fess or a chevron, it had the compensating advantage of indicating the owner by the play either upon his name or some locality associated with him. One must, in fact, always expect an original allusion to something in such charges. But what was this something in so many of those old Scots coats bearing boar heads, otters, and other animal forms, of which we have samples in *Berry*, and which certainly did not pun upon the surname?

¹ This applies equally to the two very interesting MacLeod coats, both of which display a single and particularly distinctive charge: a mountain inflamed and a castle. Here again the temptation to wander too far afield has to be resisted, but I may mention briefly that they both seem to be *mustering-place* charges—a beacon hill (a Ward or Wart hill as it is called in Orkney, from *rarda*, a beacon) somewhere in Lewis; and the famous castle of Dunvegan. This type of charge appears to have been peculiarly associated with the Norsemen of the Scottish isles, and also with a number of Highland families—though in the latter case it is usually found in the form of a war-cry, such as "Tulloch Ard!" of MacKenzie and "Craigellachie!" of Grant. See *Heraldry in Scotland* (Stevenson), p. 218, and "Our Ward Hills and Ensigns" in the *Proceedings* of the Orkney Antiquarian Society for 1931-32 (J. S. C.).

In the case of a couple of such cognizances it is possible to cite a scrap or two of evidence, which I trust may not be considered altogether outside the range of this paper. These two are the animals just mentioned—the otter and the boar.

The otter will be found in our *Armorial* forming the arms of Meldrum (Pl. XII.). Originally they bore a paly coat, and the first record of the otter is in the arms of Alexander Meldrum of Seggie in 1449.¹ Of other early otter coats, not canting (like that of Otterburn), four are on record in Scotland: those of Balfour, Fullarton, Lithgow of Drygrange, and Graden of that ilk.² Now it is a noteworthy fact that the estate of Seggie in Fife lies just at the point where the River Eden falls into its estuary: Balfour at the confluence of the only other two considerable Fife rivers, Leven and Ore; Fullarton at the mouth of the chief river in Ayrshire, the Irvine; Drygrange at the junction of the Lauder Water with the Tweed; and Graden close to the junction of the burn of Graden and the Tweed. Seeing that the otter is pre-eminently a river animal, this remarkable series of coincidences is definitely suggestive. The locality was surely alluded to by the charge.

Several boar-head coats are to be seen in the *Armorial*, but we must go outside it to find the one example that seems to throw a ray of light on the origin of the charge. In the twelfth century William de Graham acquired the estate of Dalkeith, and his descendants held it till about the middle of the fourteenth. Out of eight Graham Seals from c. 1260–85 to 1320,³ five had boar heads placed outside the shield, one having this charge also within the shield, while a sixth replaced the family escallops by three boar heads. The estate passed from them to the Douglasses, and on the seals of these Douglasses of Dalkeith (afterwards of Morton) the crest, when one is shown, from 1344 onwards was a boar accompanied by either one or two trees:⁴ clearly, one would say, the same boar as in the Graham arms.

The boar was, of course, a woodland animal, and within the park of Dalkeith there still survive remnants of the ancient Caledonian Forest. Here it would seem not only as though the animal again alluded to the locality, but that the boar existed as a cognizance before the Grahams acquired the estate, since it appears as an addition to their own ancient arms. It would be interesting to see whether a connection of boar or boar-head charges with ancient forests can be traced elsewhere.⁵ Anyhow,

¹ S.A.S.

² These last two will be found in Nisbet.

³ S.A.S.

⁴ S.A.S.

⁵ It is worth noting that the chief home of the boar-head charges was the Merse or Berwickshire, where Swinton, Gordon, Nisbet, Redpath, Duns, and several other families bore them (see Nisbet), and that the Scandinavian form of Merse or March was *mark*, properly "border-land," which came

there is in this Dalkeith case and that of the otters a distinct indication of a very ancient native element in Scottish armoury, peculiar to the soil.

It only remains to express my deep obligation to the Lord Lyon, Sir Francis J. Grant, for the facilities he has most kindly afforded me for pursuing this investigation at a long distance from records usually available; to Mr Thomas Innes of Learney, Albany Herald, for invaluable help in various matters: to Messrs George Waterston & Sons, for the great pains they have taken with the plates: and to the staff at the Historical Department of the Register House for so patiently and courteously gratifying a voracious appetite for facts.

to have the meaning of "forest," owing to the border-lands usually being forest country. If this was the history of the Scottish name Merse, one has pretty strong support for the view advanced above.

PLATES IV—XIV.

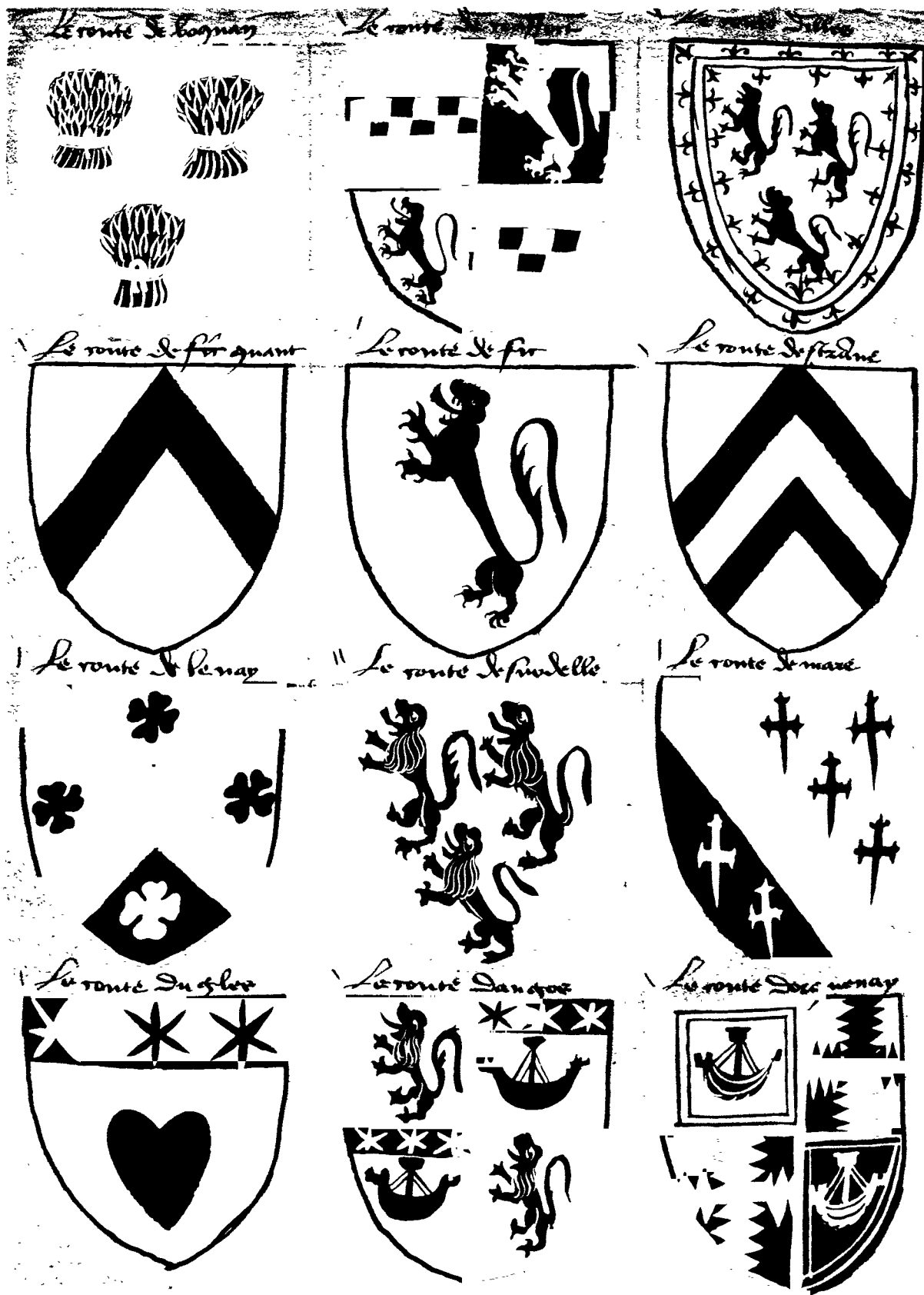
PLATE IV. (folio 157 Verso)

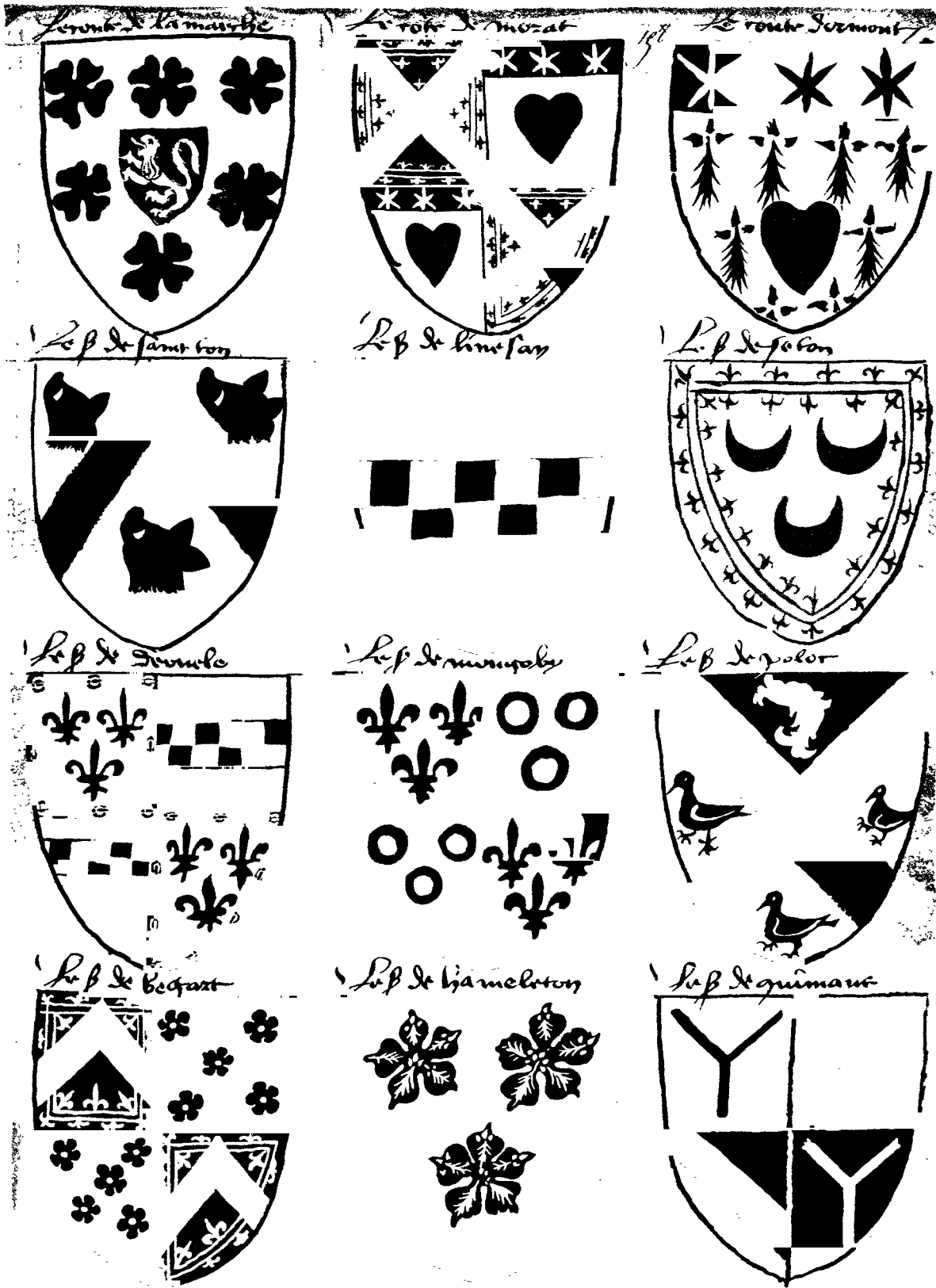
<i>Le conte de boquan</i> Earl of Buchan	<i>Le conte de craffort</i> Earl of Crawford (1 and 4 Lindsay: 2 and 3 Abernethy)	<i>Le conte dilles</i> Earl of Ross
<i>Le conte de quant</i> Earl of Carrick	<i>Le conte de fic</i> Earl of Fife	<i>Le conte destraine</i> Earl of Strathearn
<i>Le conte de lenay</i> Earl of Lennox	<i>Le conte de surdelle</i> Lord of the Isles	<i>Le conte de mare</i> Earl of Mar
<i>Le conte dugles</i> Earl of Douglas	<i>Le conte dangos</i> Earl of Angus (1 and 4 Angus: 2 and 3 Douglas)	<i>Le conte dorquenay</i> Earl of Orkney (1 and 4 Orkney: 2 and 3 Sinclair)

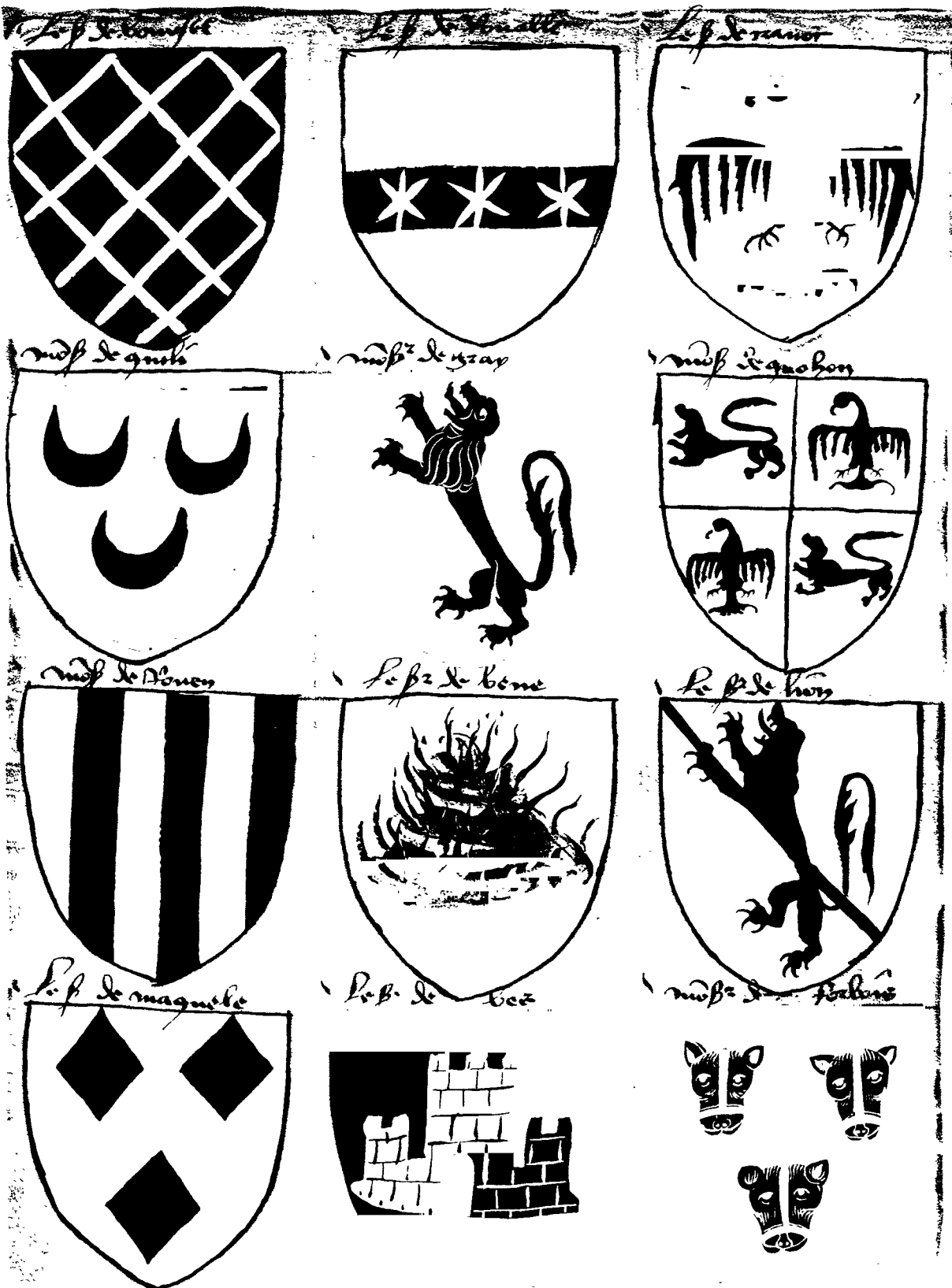
PLATE V. (f ^o 158)		
<i>Le conte de la marche</i> Earl of March (Dunbar Arms)	<i>Le conte de morat</i> Earl of Moray (1 and 4, see Text)	<i>Le conte dormant</i> Earl of Ormond
<i>Le sire de sainton</i> Swinton	<i>Le sire de linesay</i> Lindsay (of Byres)	<i>Le sire de seton</i> Seton
<i>Le sire de dernele</i> Stewart of Darnley (1 and 4 Aubigny)	<i>Le sire de mongoby</i> Montgomery (2 and 3 Eglinton)	<i>Le sire de poloc</i> Pollock
<i>Le sire de begart</i> Fleming of Biggar (2 and 3 Fraser)	<i>Le sire de hameleton</i> Hamilton	<i>Le sire de quimaus</i> Cunningham of Kilmaurs (2 and 3 Dennistoun)
PLATE VI. (f ^o 158 V ^o)		
<i>Le sire de bouesel</i> Lyell of Duchal	<i>Le sire de Roualle</i> Muir of Rowallan	<i>Le sire de cranoc</i> Carnegy
<i>Monsieur de quili</i> Oliphant of Archellie	<i>Monsieur de gray</i> Gray	<i>Monsieur de quohon</i> Ogilvy of Auchterhouse (2 and 3 Ramsay)
<i>Monsieur de Rouen</i> Ruthven	<i>Le sire de beue</i> MacLeod of Lewis	<i>Le sire de lion</i> Lyon
<i>Le sire de maquele</i> (see Text)	<i>Le sire de bes</i> MacLeod of Dunvegan	<i>Monsieur de forbois</i> Forbes
PLATE VII. (f ^o 159)		
<i>Le sire de grain</i> Graham	<i>Le sire de losec</i> Leslie (2 and 3 Mowat?)	<i>Le sire de bouquenel</i> Buchanan
<i>Monsieur de Rues</i> Wemyss of Rires (2 and 3 Bisset)	<i>Le sire de chastelmont</i> Stewart of Castlemilk	<i>Le sire de copal</i> Murray of Cockpool
<i>Le sire de queinmont</i> Carlyle of Kinmont	<i>Ceulx de quoquenton</i> Johnston	<i>Ceulx de Mandoel</i> Macdowal
<i>Ceulx de sans</i> Crichton of Sanquhar	<i>Ceulx de dapliction</i> Stewart of Dalswinton	<i>Ceulx du lar</i> Dunbar of Mochrum

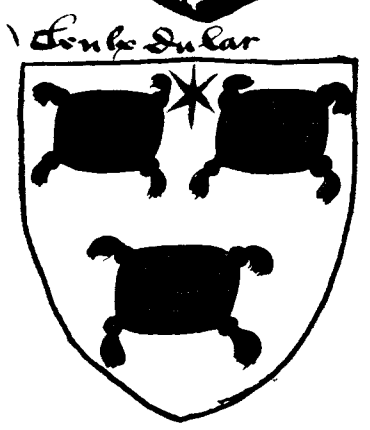
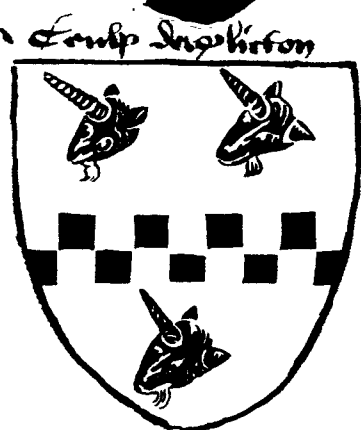
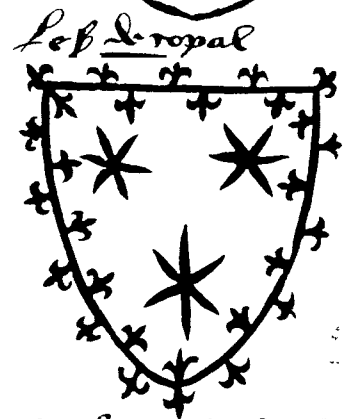
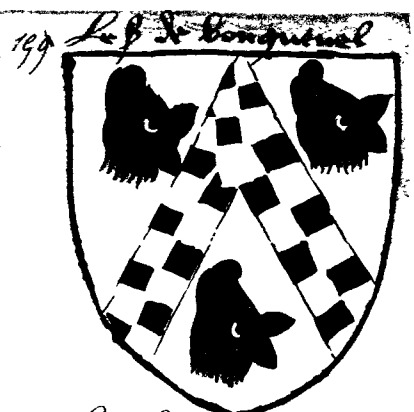
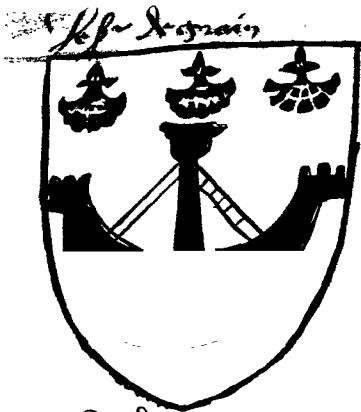
PLATE VIII. (f ^o 159 V ^o)		
<i>Ceulx de moucastel</i> Kerr	<i>Ceulx dandresel</i> Lordship of Annandale	<i>Ceulx de nesegles</i> Herries of Terreagles (2 and 3 Lindsay?)
<i>Ceulx dapegart</i> Jardine of Applegarth	<i>Ceulx de blairian</i> Kirkpatrick	<i>Ceulx de tranquart</i> Kennedy of Blairquhan
<i>Ceulx de tranquart</i> Cathcart	<i>Ceulx de bouldy</i> Macellan of Bombie	<i>Ceulx de maligny</i> Macgie
<i>Le seignuer de lodun</i> Campbell of Loudon	<i>Ceulx de redenmeton</i> Campbell (of Ardentinny?)	<i>Ceulx de foucart (on ?)</i> Fockart
PLATE IX. (f ^o 160)		
<i>Ceulx de blauehut</i> Blackwood (Weir of?)	<i>Ceulx de quarehut</i> Maxwell of Calderwood	<i>Ceulx de helioton</i> Sempill of Elliotstoun
<i>Ceulx de dunegles</i> Home of Dunglass (1 and 4 Pepdie)	<i>Ceulx de maligny</i> Melville	<i>Ceulx de limeton</i> Livingstone
<i>Ceulx de callemey</i> Livingstone of Callander (2 and 3 Callander)	<i>Ceulx de crenoc</i> Menzies of Enoch	<i>Monsieur de gasc</i> Murray of Gask
<i>Ceulx de toury</i> Wardlaw of Torry (2 and 3 Valange)	<i>Ceulx de domhery</i> Livingstone of Drumry	<i>Ceulx de bediton</i> Maitland of Lethington
PLATE X. (f ^o 160 V ^o)		
<i>Ceulx de balgoniy</i> Sibbald of Balgony	<i>Ceulx de cornille</i> Colville (2 and 3 Lindsay)	<i>Ceulx de Rieuderfu</i> Rutherford
<i>Ceulx de tourneboulle</i> Turnbull	<i>Ceulx de quador</i> Sandilands of Calder (1 and 4 Douglas)	<i>Ceulx de bas</i> Lauder of Bass
<i>Ceulx de dondas</i> Dundas	<i>Ceulx de bernbaquel</i> Mowbray of Barnbougat	<i>Ceulx de criston</i> Crichton
<i>Ceulx daluohy</i> Ramsay of Dalhousie	<i>Ceulx de carmes</i> Crichton of Cairns (2 and 3 Cairns)	<i>Ceulx de luffennes</i> Bickerton of Luffness

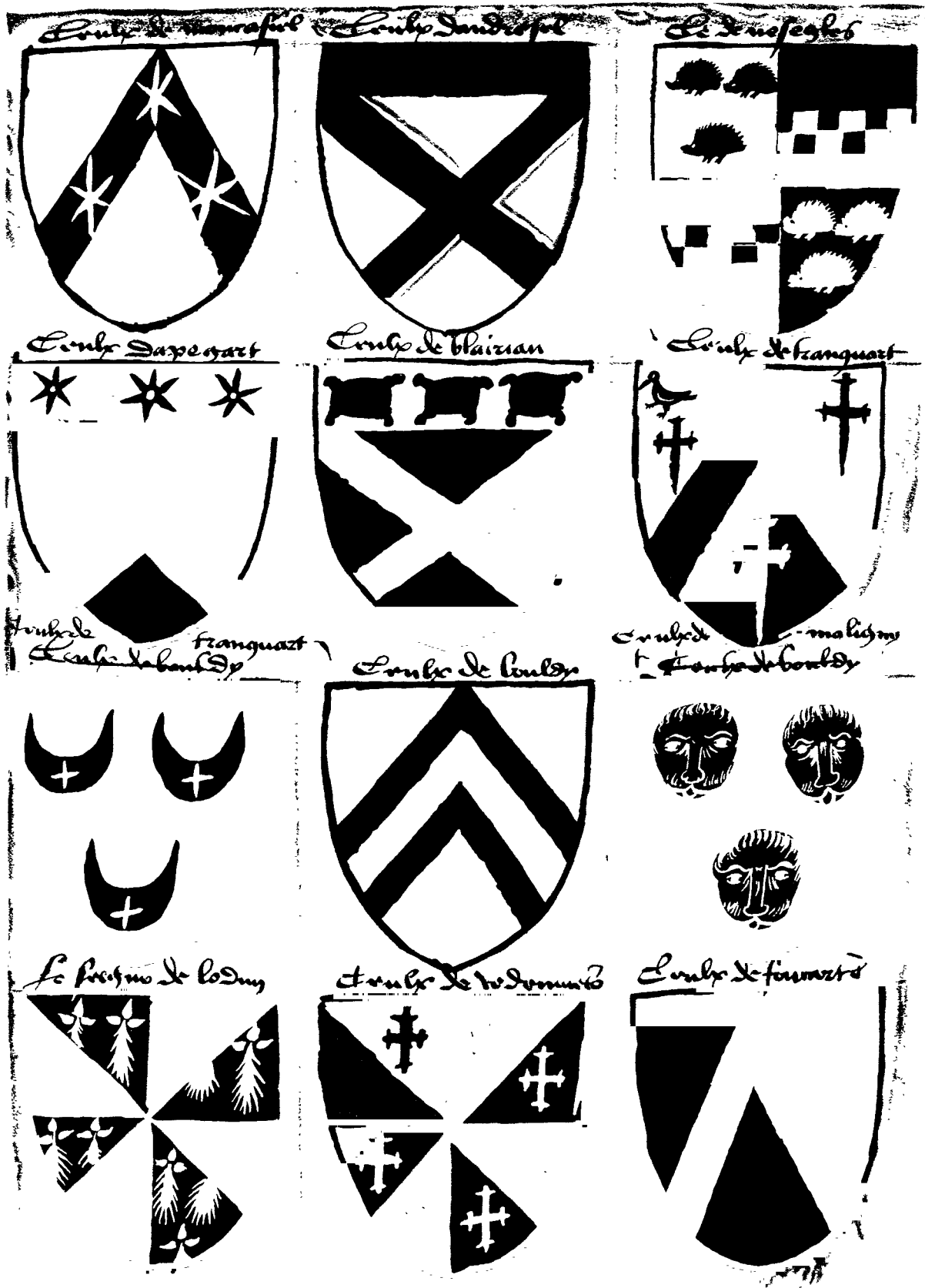
PLATE XI. (f ^o 161)		
<i>Le sire de bocquint</i> Borthwick	<i>Ceulx de helles</i> Hepburn of Hailes	<i>Ceulx de salmeton</i> Kerr of Samuelton
<i>Ceulx de bacilli</i> Towers of Dalry	<i>Ceulx de bel</i> Dunbar of Biel	<i>Ceulx de lanton</i> Cockburn of Langton
<i>Ceulx de corcofin</i> Forrester of Corstorphine	<i>Ceulx de listaurie</i> Logan of Restalrig	<i>Ceulx de haldor</i> Dishington of Ardross
<i>Ceulx de haubogle</i> Hoppringle	<i>Ceulx de herques</i> Harcarse	<i>Ceulx de Dalhel</i> Dalzell
PLATE XII. (f ^o 161 V ^o)		
<i>Ceulx de lamiton</i> Baillie of Lamington	<i>Ceulx de laguiere</i> Scott of Balwearie	<i>Ceulx de dongan</i> Normanville of Boquhan, i.e. of Gargunnoch
<i>Ceulx de poloc</i> Maxwell of Pollock	<i>Ceulx dabrecherme</i> Abercromby	<i>Ceulx de boisglau</i> Macculloch
<i>Ceulx de melledron</i> Meldrum	<i>Le sire de crafort</i> Crawford	<i>Le sire de Ramppe</i> Dalrymple
<i>Ceulx de bogiry</i> Buchan	<i>Le sire de coqueran</i> Cochrane	<i>Le sire de menipegny</i> Monipenny
PLATE XIII. (f ^o 166)		
<i>Ceulx de grenan</i> Crawford of Grenan	(No name) Rait	(No name) Monipenny of Pitmilley
<i>Ceulx de Ratri</i> Ratray	<i>Ceulx de bousainuille</i> Boswell	<i>Ceulx de glin</i> Glen
<i>Ceulx de torn</i> Haliburton of Dirleton?	<i>Ceulx de Wichart</i> Wishart	<i>Ceulx de colleuille</i> Colville
<i>Jorge bannantin</i> George Bannatyne	<i>Jaques de Rous</i> James Ross	<i>Guille cliston</i> William Clouston
PLATE XIV. (f ^o 166 V ^o)		
<i>Guilleme crafort</i> William Crawford	<i>Guille arculet ?</i> William Auchencleek	<i>Guilleme de modreuille</i> William of Motherwell
<i>Jehan simple</i> John Sempill	<i>Alexandre maquen</i> Alexander Muir	<i>Abre commier</i> Abercromby

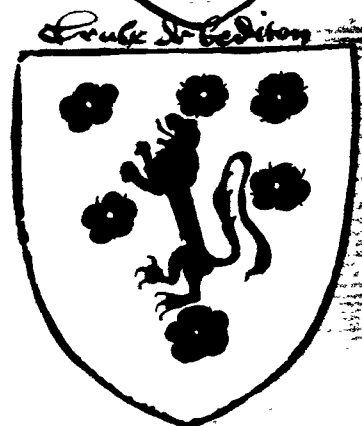
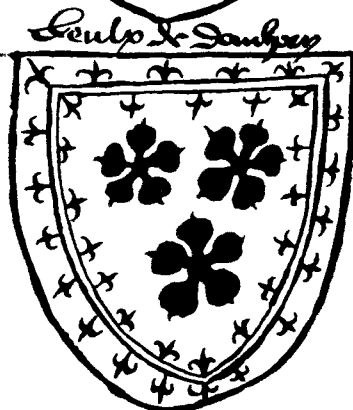
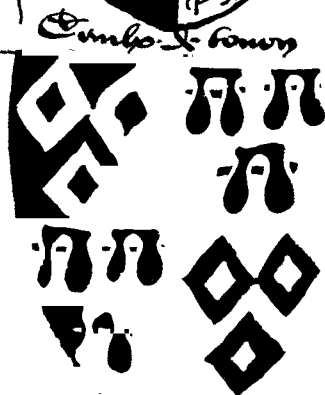
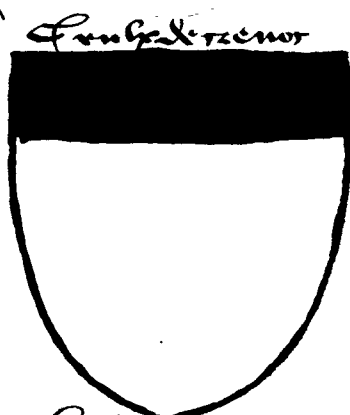
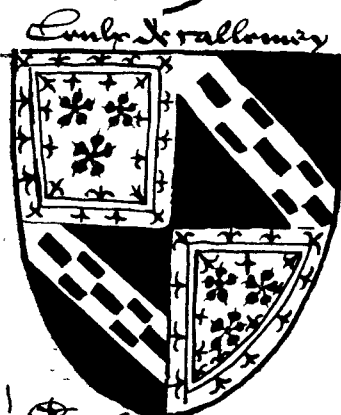
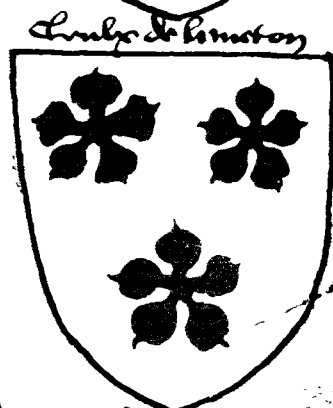
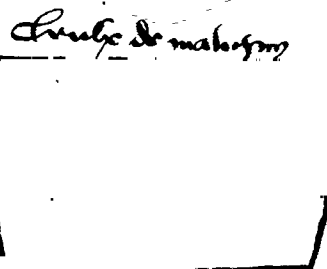
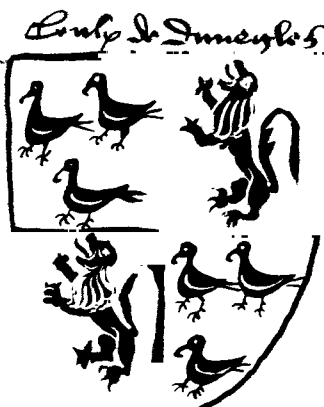
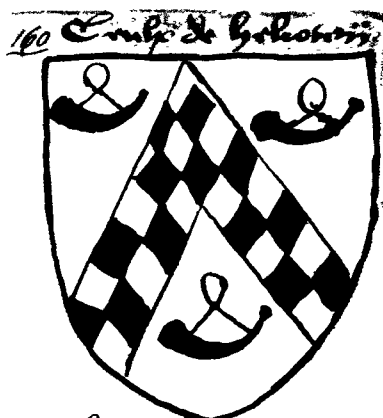
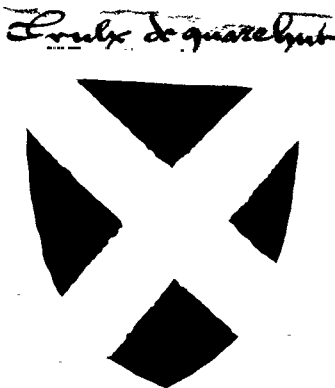
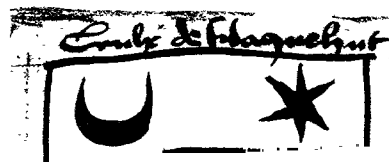


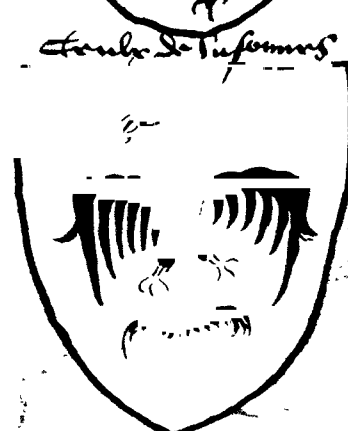
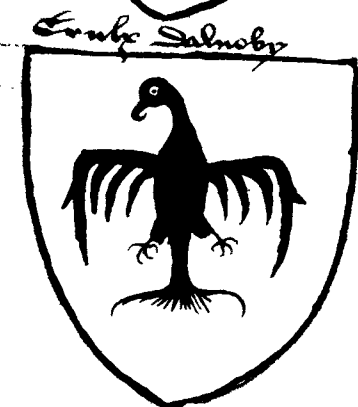
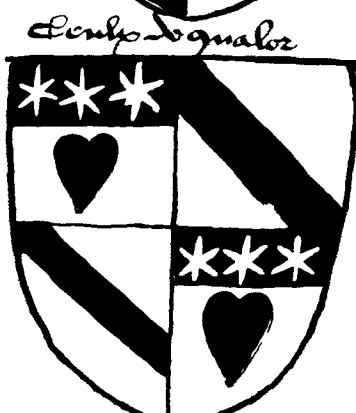
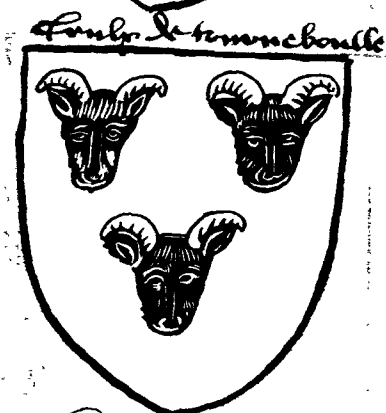
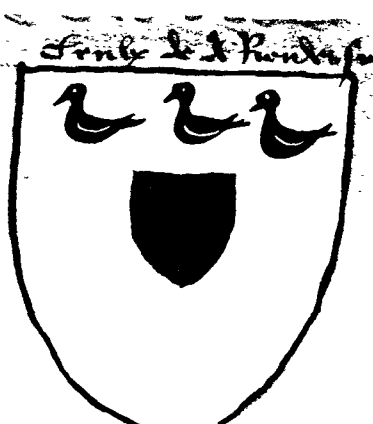
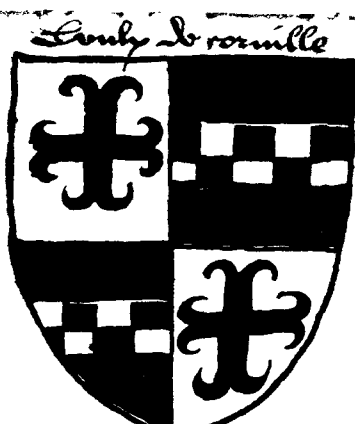
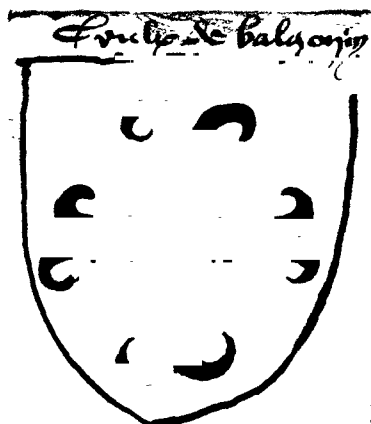


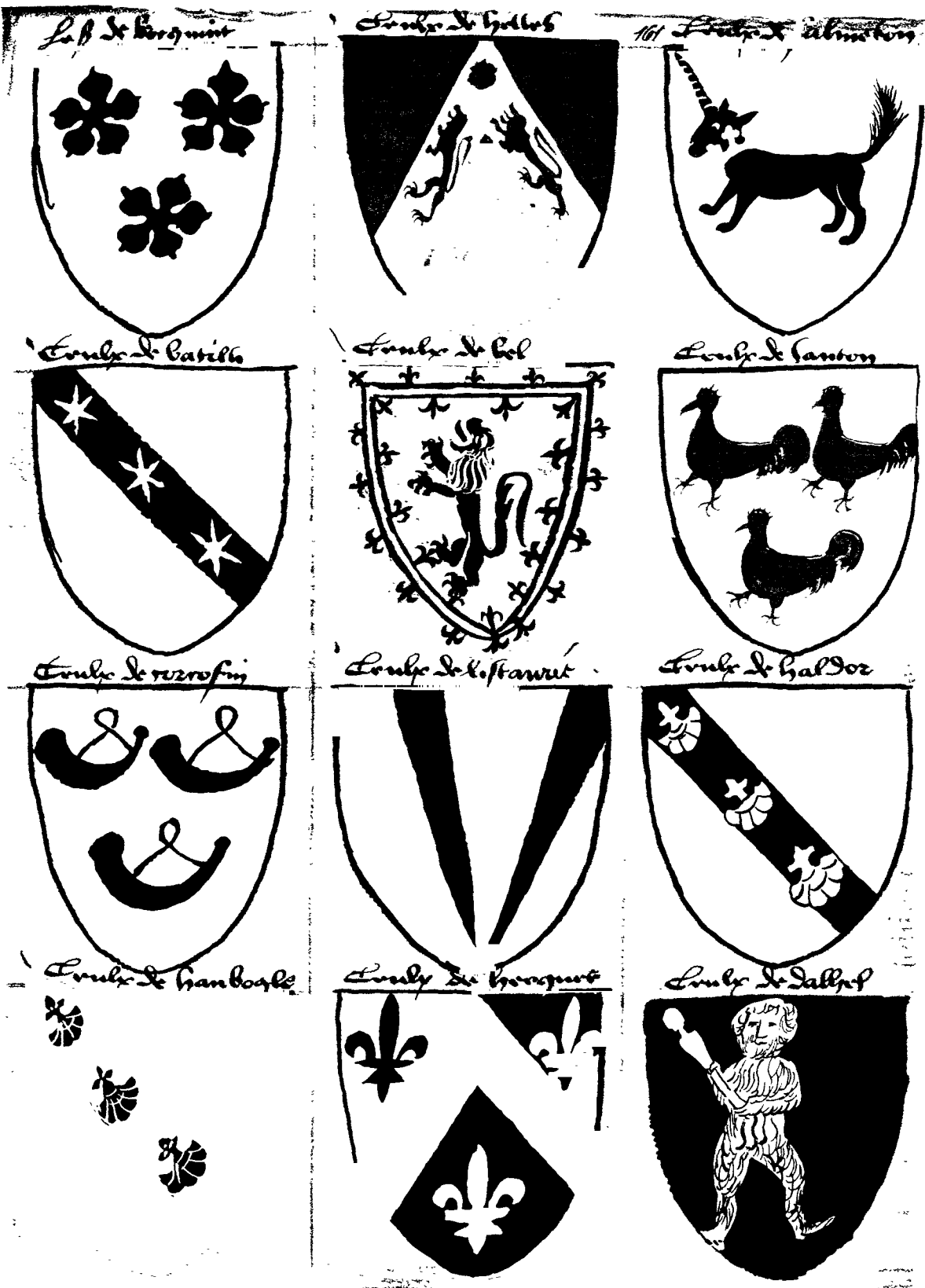


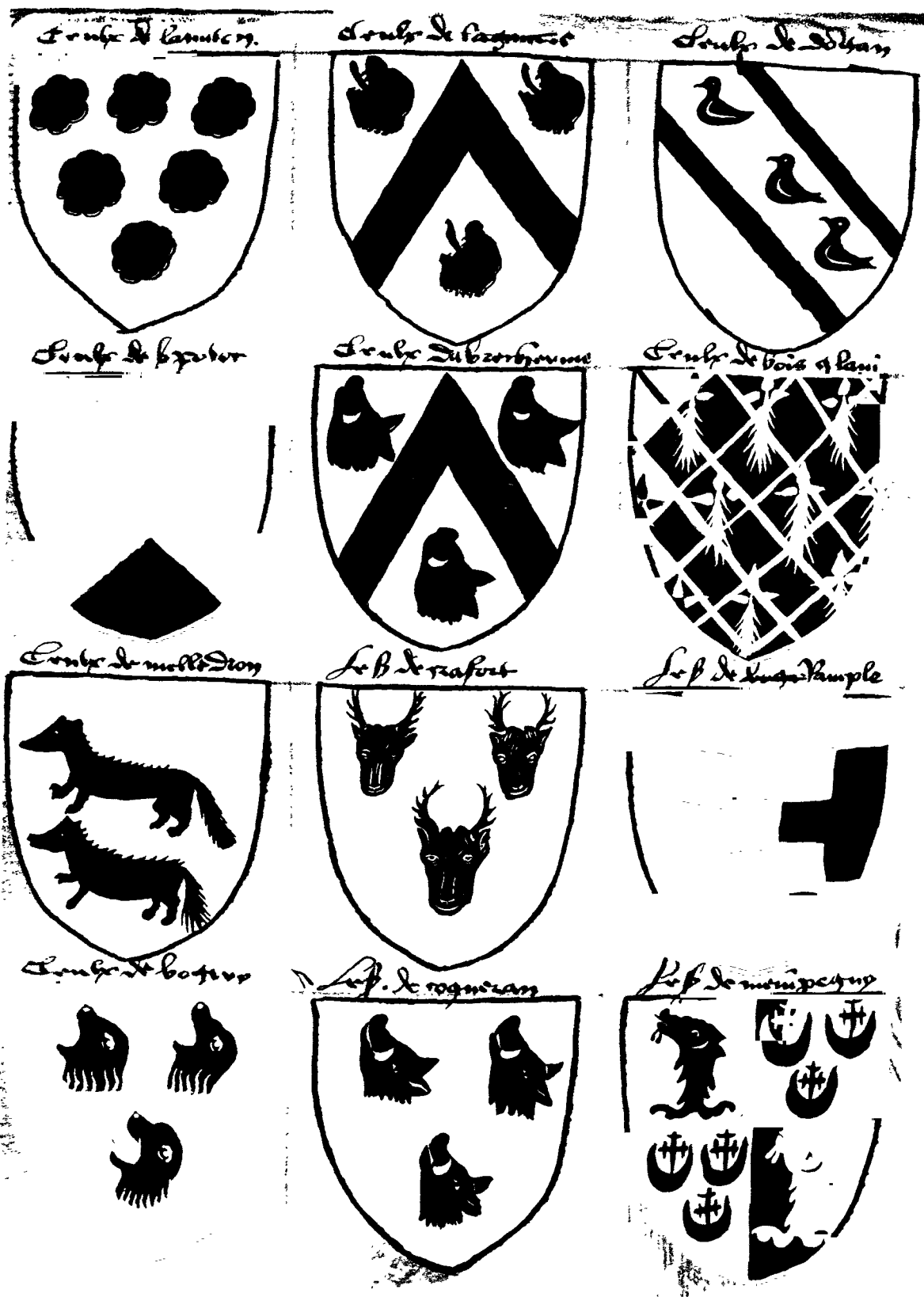






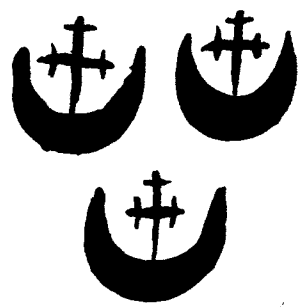
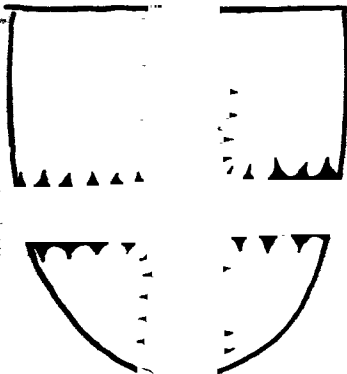




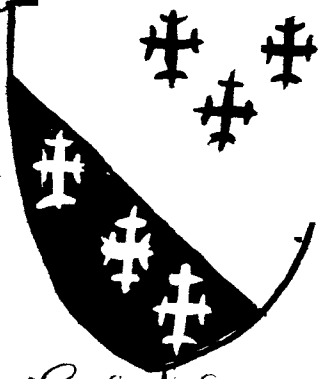


166

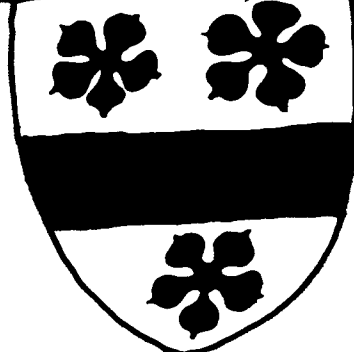
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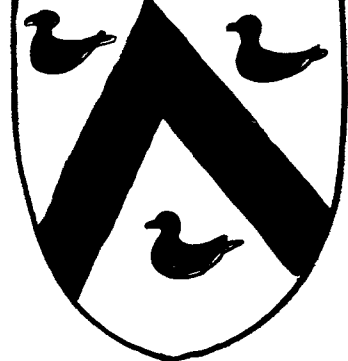
Coulez de Vata



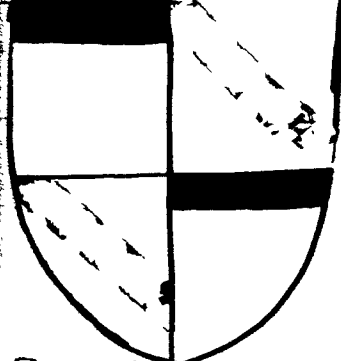
Coulez de Bonfainville



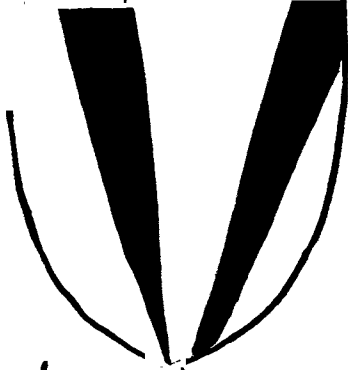
Coulez de Glin



Coulez de Corn



Coulez de Wierhart



Coulez de rollruille

Jozse Banantin

Jagues de Pons

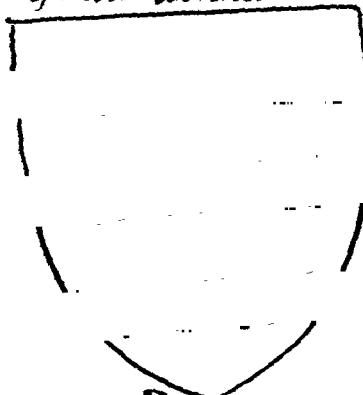
Guille riston

Folio 166 Vo.]

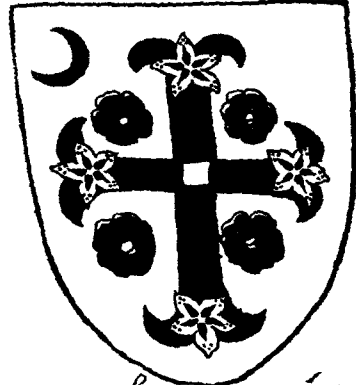
Guilleme masort



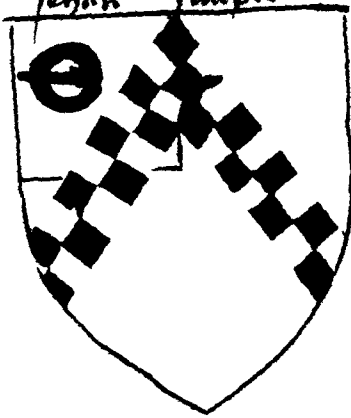
Guille' acruet



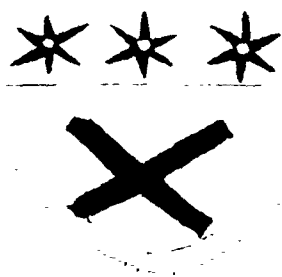
Guille'us de madreulle



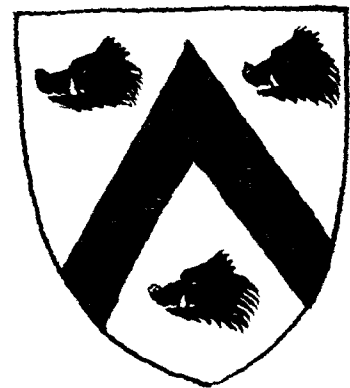
senan simple



alpendur magnen



a bre commier



III.

SUGGESTIONS FOR THE DATES OF FOUR SCOTTISH MONUMENTS. BY Miss MARY E. BOYLE, F.S.A.Scot.

The age of the sculptured stones of Scotland so ably catalogued and described by J. Romilly Allen and other experts is a subject which has engrossed my attention for some years. Vague dating deduced from similarity of ornamental design had been tried, but years of study of the recurrence and limitation of ornament in prehistoric and protohistoric art had made me chary of confining in time what was more probably due to the limitations of human fancy, the rhythm of the hand, or a subtle subconscious memory.

In certain parts of Scotland, Irish ecclesiastical influence seemed to me to be lacking, though the Irish mirage still lures many to extend the artistic riches of that country over all art in her nearest neighbour. I felt that an intense search in local history might lead to a clue, a search notoriously difficult in a land where documents are few, and, till lately, carelessly kept.

My search has so far produced results regarding four monuments.

Fowlis Wester.—Some few miles on the road from Crieff to Perth a road striking uphill on the left leads to the hamlet of Fowlis Wester. The church was restored after the War as a memorial to those fallen, and in so doing a long stone was removed from a wall (fig. 1). It was then seen to be carved, though the stone had flaked off before the carving was finished. A cross of plaitwork occupies the centre, to the left, a man seated in a carved chair ending in a hound's head at the back, has a plant with seven leaves and a double bud in front of him. He is faced on the far side of the cross by an ecclesiastic in robes and cowl whose chair ends in a bishop's crook, and above whose



Fig. 1. Carved Stone at Fowlis Wester.

head is an angel. Two ecclesiastics walk below the layman's chair. The base of the cross looks like a book satchel.

The two top panels are occupied by a sword, a targe, and what is known in Scandinavia as a "dragon-stick" above the layman: there is a monster seizing a young human in its jaws above the ecclesiastic.

Now the Abbey of Inchaffray was founded by Gilbert, third Earl of Strathearn and his wife Matilda, daughter of the Earl of Albemarle, at a time when they had seven sons living (the double bud and seven leaves), and one son dead (the angel) in A.D. 1200. The dead son, Gilchrist, was interred in the Abbey. The charter was found in the papers of the Earl of Kinnoull. The first signature is that of Robert, Bishop of St Andrews (the figure seated facing the Earl), John, Bishop of Dunkeld, and Jonathan, Bishop of Dunblane assenting (the two ecclesiastics below the Earl's chair). A duplicate of the "dragon-stick" above the Earl's head with his targe and sword can be seen in the Museum of Oslo. It seems to have been placed in the front of the chariot or sledge of a person of quality. At the time Earl Gilbert lived, much of Scotland was under Scandinavian rule and some of their customs would prevail. Above the seated ecclesiastic is a dragon or monster from whose open jaws a young human figure is trying to escape: perhaps the unlucky Gilchrist, dead in 1198. Behind the Earl is a tree with fruits or leaves perhaps referring to the eleven great and small churches whose benefices were given to the Abbey of Inchaffray.

How much one regrets the scaling off of the stone before the monument was finished, for if the other witnesses had been portrayed the reading would have been clear! Who were to face the Bishops? The three Abbots of Arbroath, Scone, and Dunfermline? Or was it "Constantine the butler" who was too much for the stone?

I suggest it is a page of local history.

St Vigean's.—In the church of St Vigean's near Arbroath is a partially broken cross placed against a wall (fig. 2). The cross, of which the ends of both arms and the top are broken, shows a variety of patterns, broken Greek keys, knots, plaitwork, triskeles, and what is known as the La Tene shield pattern. The two side panels are occupied by figures. On the right, two seated people are dividing a round object between them; below their chairs is a horned beast and a very emaciated man who is naked and kneeling on one knee in front of the beast with a sword or stick in his hand. Something like a curled tongue projects near his mouth. On the other side panel is the lower part of a robed figure with a kilted edge to the garment, and boots: three-quarters of a man standing on his head on a block with arms pressed in to the body as if tied, facing him a figure in robes with a kilted edge, boots, and a peaked hood like a domino covering

the face. Below, two priests with cowls pushed back, one with a book satchel on his shoulder, carrying staves or candles.



Fig. 2. In the church of St Vigean's, near Arbroath.

For long I thought the right hand panel was a famine scene, saints with a miraculous loaf, and the method of stabbing cattle in the neck to give the starving a draught of blood, which I was assured was a local

custom in the famine times of the Middle Ages. I was also told that beheading was done with a sword, the victim having been stood on his head on a block. It seemed to me that was an untenable position.

I wish to suggest another reading.

William the Lion founded only one Abbey, that of Aberbrothock in A.D. 1212. He dedicated it to St Thomas à Becket, influenced by the fact that his capture by the King of England took place just after that monarch had done penance at Becket's tomb in Canterbury. This saint was not popular in the district, the church of St Vigean or St Fechin having stood on the site where the church containing this cross still stands, since the sixth century. In spite of this William gave the church to his Abbey. The feud with the MacWilliams, his cousins who equally claimed the throne of Scotland, had continued for the whole of William's reign, and in his old age Godfrey MacWilliam conducted fairly successful raids and campaigns against the King, endangering the succession of young Prince Alexander.

The Earls of Buchan and Fife were entrusted with the task of engaging him while the King marched from the south with a large army. The size of this army induced Godfrey's followers to surrender their leader: once a prisoner he refused to eat and it was feared would die of starvation before reaching the King. The Earl of Buchan, the Justiciary, hurried him southwards and had reached Kincardine when a message came from William that he did not wish to see his enemy, so the Earl hung Godfrey up by the feet and beheaded him. Hung by the feet his head could touch the block in that position. Can this be another page of history standing near the one Abbey of William the Lion? It is not so clear as Fowlis Wester but I submit it is possible.

Invergowrie.—In the walls of a roofless ruined chapel at Invergowrie is a stone (fig. 3) on which are three ecclesiastics above two entwined dragons. Invergowrie was the favourite place of residence of Alexander I, 1107–1124. His reign was distinguished by a struggle about his right as hereditary Abbot of St Andrews to invest the Bishop of that see with ring and crozier. He first chose Turgot, once confessor to his mother Queen Margaret, but the discussion as to whether or not the King had the right of investiture, and opposing views on the remodelling of the Scottish Church raised a fierce storm and Alexander refused permission for Turgot to go to Rome and lay his case before the Pope. Turgot was allowed to retire to his monastery of Durham, and died there in 1115.

The King's next choice was Eadmer of the see of Canterbury, but he, wishing to reduce the Bishopric of St Andrews to a subordinate position under Canterbury, disputes broke out again and Eadmer resigned, sent



Fig. 3. Carved Stone at Invergowrie.

back the ring which he had received from the King, and returned to Canterbury. Later he wished to retract and made submission to Alexander, but the King appointed Robert, Abbot of Scone, to the post and himself died before he could invest Robert.

The stone at Invergowrie shows three ecclesiastics holding books: the two outside figures have shoulder brooches on which are crosses and the central figure none, but he dangles a ring on a string. Turgot was Prior of Durham, Robert was Abbot of Scone, Eadmer who sent back the ring was a simple monk. I suggest it is once more a page of history.

As for the interlaced dragons below, Alexander fought under the battle flag of his mother, the dragon of Wessex, sometimes erroneously called the White Horse, and Scottish Cumbria being left to his brother David, there was a dual sovereignty.

Benvie.—A few miles from Invergowrie on the borders of Perthshire and Angus in the little churchyard of Benvie is a tombstone on which

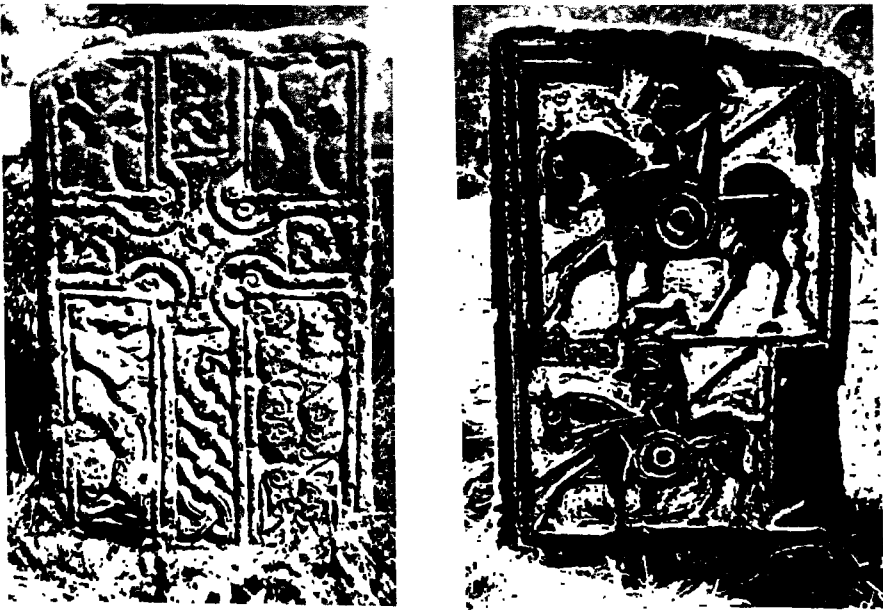


Fig. 4. In the Churchyard of Benvie, Perthshire.

are two riders. The helmet of the lower one with a nasal piece distinctly seen, is a type said to have been in use in this country only during the first half of the thirteenth century, a date bringing it near those of the other stones. The front is interesting for the cross is formed as regards

the main shaft, of writhing dragons, the left lower panel shows two bear-headed monsters interlocked, muzzle to muzzle; on the right, twined dragons with tongues out have the backs of their heads touching. The two angels in the top panels seem to be clutching the lower half of their wings as well they may with all this seething monstrous life below them. I know no monument so unecclesiastically ecclesiastical.

In the course of the discussion which followed, Mr James S. Richardson, H.M. Inspector of Ancient Monuments, put forward certain considerations which ran counter to the views expressed in the paper. His points were:—

- (1) The closeness of the artistic relationship existing between these stones and monuments of admittedly Celtic origin, some of which bear symbols.
- (2) The fact that, by the period to which these stones were assigned by the writer of the paper, Scotland, and particularly the district in which the stones were found, had been permeated by Romanesque and early Gothic influences, introduced by the mediæval Church, which had revolutionised building construction and architectural design.
- (3) The difficulty of believing, in view of this last consideration, that the type of art represented on the Fowls Wester and St Vigean's stones, which had reached its highest development between the seventh and tenth centuries, still existed in the twelfth and thirteenth centuries without any signs of decadence or of influence by contemporary ideas of design.

IV.

NOTES ON SCOTTISH COINS: (1) REX SCOTTORUM PENNIES OF DAVID II.; (2) EDINBURGH LIGHT GROATS OF ROBERT III.; (3) SOME JAMES II. GROATS OF THE THIRD VARIETY OF THE FLEUR-DE-LIS GROATS; AND (4) GILBERT KIRKWOOD'S MARK ON A GOLD COIN OF JAMES V. BY C. H. DAKERS, M.C., F.S.A.Scot.

(1) REX SCOTTORUM PENNIES OF DAVID II.

David II.'s first issue of pennies begins with a well-designed head and large lettering. Of this type I have found only one obverse die and two slightly different reverses, both of which read **REIX SCIO TOR VM** +, while a third has **RCIX** for **REIX** (B 231, 5). This lettering, as Burns remarks, is more akin in style to that on the John Baliol smooth surface pennies than to that on Robert I.'s coins.

The remaining five types of head are a series of caricatures, wizened or negroid in appearance. The lettering is smaller and the Lombardic **ℳ** is used.

Burns places second in the series his fig. 231, presumably because the Ferguslie Collection contained a specimen of this second head muled with the reverse of the first type. It appears to me, however, that it is likely that some of the last five types of head were issued simultaneously, as I have in my collection pennies with the heads as on Burns 234 and 236, also with the Roman **M** reverse from the same die as type one.

There is a variety of the reverse with **ℳ** in which two **T**'s appear in Scottorum and the **O** is omitted. Burns does not notice that the omission of a letter has been made necessary by the retention of the cross at the end of the legend. There is only one die of this style.

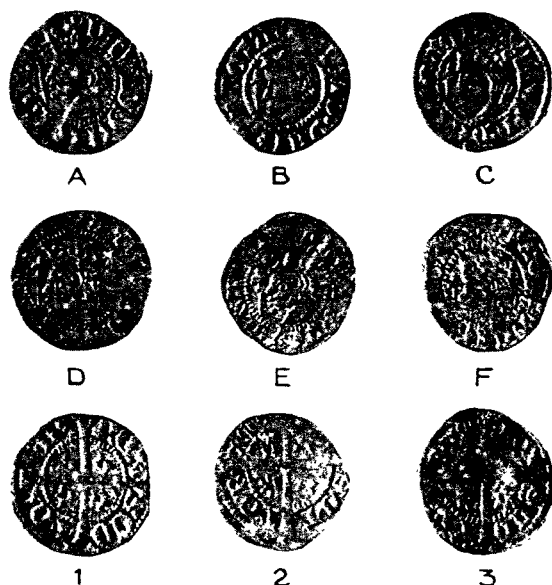
All the remaining reverses read **REIX SCIOTTORVM** without the terminal cross and are from several dies.

I have placed below an analysis of the interchanges of dies on known coins of this issue.

Obverses A 1st head.	Large lettering.	B 229 (one die)
B 2nd „	Small „	B 231 (two dies)
C 3rd „	„ „	B 234 (one die)

Obverses D 4th head. Small lettering. B 236 (several dies)
 E 5th „ „ „ B 244 („ „)
 F 6th „ „ „ B 235 (one die)

I have moved Burns 235 from its place as fourth head to sixth as it has no reverses but No. 3 and only a single obverse die. It would seem to be the last of the series.



Pennies (Sterlings) of David II.

A obverse.	First head.	Large lettering.	1. Reverse of A.	Large lettering.	M.
B „	Second head	} Small lettering.	2. „	SCIT . . M	Small lettering.
C „	Third head		3. „	SCOTT . . M.	„ „
D „	Fourth head				
E „	Fifth head				
F „	Sixth head				

Reverses No. 1. **REX SCIO TOR VM +.** Large lettering (three dies)
 No. 2. **REX SCIT TOR VM +.** Small lettering (one die)
 No. 3. **REX SCIO TTO RV M.** „ „ (several dies)

A and No. 1. Burns 229, 1
 A „ „ 2. „ 230, 2
 A „ „ 3. „ 230, 3
 B „ „ 1. „ 231, 4, 5

B and No. 2.	Author
B „ „ 3.	Burns 232, 233
C „ „ 1.	Author
C „ „ 2.	Burns 234, 9
C „ „ 3.	„ 234, 8
D „ „ 1.	Author
D „ „ 3.	Burns 236 ff.
E „ „ 3.	„ 244 ff.
F „ „ 3.	„ 235

The mules of D and No. 2, E and Nos. 1 and 2, are not known to me.

(2) EDINBURGH LIGHT GROATS OF ROBERT III.

Very little appears to be known of the light issue of groats struck at Edinburgh at the end of the reign of Robert III. Edinburgh mint is generally regarded as a common one, but in fact only four coins of the light issue struck there were known to Burns as against eight Dumbarton groats. Again, in the Catalogue of the National Museum there are two Dumbarton groats but no Edinburgh specimen at all. Of Aberdeen Burns quotes three specimens, and in the National Museum Collection there is one. An explanation of the rareness of these groats may be that the Fortrose hoard contained none and must have been buried before their issue.

The Edinburgh groats are peculiar in that the faces are all put in with the worn-out punches of the "aquiline face" groats, whereas the Dumbarton and Aberdeen coins appear each to have a new head of their own. The issue as a whole is not attractive, as the coins are usually ill-struck and in poor condition.

Burns states (vol. i. p. 324): "The points of the tressure are ornamented with a single pellet instead of by triple pellets or by trefoils." This only holds good in some cases, and there is also a wider range in the number of the arcs in the tressure than the eight or twelve observed by Burns. The number of varieties would, in fact, make it appear that there were subdivisions in the issue.

Burns's fig. 417 illustrates the coin No. 50 in the Ferguslie Collection, but there is no illustration of 50*a*, which has the same obverse (with a pellet-pointed tressure of twelve arcs) with a different reverse. It is stated to be in the Guthrie Lornie Collection. I have a specimen which is probably from the same reverse die which reads:

+ DſS — | MS + LIBE | RXTOR : | MÆSDſ

The next coin (fig. 418) has eight arcs round the bust with single pellets on the points. Burns gives the stops as crosses and saltires. This is not correct according to the coin illustrated, which shows that they are the same as those on the Dumbarton groats (figs. 414–416D). These stops he calls “large fleurs-de-lis formed like slipped trefoils.” A more correct description would be a cross or saltire formed of one straight and one curved limb, thus †.

There are in my collection five varieties of the Edinburgh light groats which are, so far as I am aware, unpublished. They are as follows:—

- (1) O. Nine arcs round the bust pellet-pointed.

	+	ROBERTVS	†	DEI	†	GR	Λ	CI	Λ	†	REX	SCIO	†
R.	+	D	Λ	S(?)	P	†	T	Λ	C	I	T	O	R
		VILL					Λ	Λ	D		I	Λ	B
											R	G	h

(Weight 30 grains)

- (2) O. Eight arcs round the bust pointed with three pellets.

	+	ROBERTVS	†	DEI	†	GR	Λ	CI	Λ	†	REX(?)	SCIO
R.	+	D	Λ	S	†	P	†	T	Λ	C	I	T
		VILL						Λ	Λ	D	I	B
											R	G

(Weight 28 grains)

Next comes a group with a quatrefoil of four pellets on the breast.

- (3) O. Seven arcs pointed with three pellets not round the bust, quatrefoil on breast.

		ROBERTVS	†	DEI	†	GR	Λ	CI	Λ	†	REX	SCIO
R.	+	D	Λ	S	†	P	†	T	Λ	C	I	T
		VILL						Λ	Λ	D	I	B
											R	G

(Weight 28 grains)

- (4) O. Tressure of seven arcs, and part of an arc to the left, not round the bust, pointed with three pellets. Of the pellets in each group two are within the double lines of the tressure. Quatrefoil on breast.

	+	ROBE	.....	GR	Λ	CI	Λ	†	REX	SCIO
R.	+	D	Λ	S	†	P	†	T	Λ	C
		VILL						Λ	Λ	D

(Two specimens, weight 29 and 28½ grains)

(2) A variety of the reverse on the last, reading:

(3) A variety of Burns's fig. 497, reading:

Another new variety not in Burns, which has a tressure of eight arcs and sceptre as usual to the King's right, reads:

R. Lis 1st and 3rd quarters and annulet on the centre of the cross.

The crown initial mark on the reverse is used only at Stirling (Burns, fig. 503A, B), and the obverse with the large lis stops is from the same die as Burns's fig. 503 of Stirling, so it would appear that on the closing of the Stirling mint (which did not strike groats of the next two varieties) the dies were returned to Edinburgh and used there with an altered reverse. Burns makes no mention of any groat with an annulet on the centre of the reverse cross, but annulets were the "difference" added by James II. to his father's Great Seal.


From the Walters Sale, 1932, came (lot 637) an unpublished groat with the obverse initial mark a large crown. There are nine arcs in the tressure.

R. Lis 1st and 3rd quarters.


This type was not known to Burns.

Another groat which appears to be unpublished has on the obverse

a very narrow bust which fits into one arc of the tressure of nine arcs. The sceptre is longer than usual and the sidelocks are very small. The inscriptions are:

O. + IACIOBVS^o DEI^o GR^o REX^o SCOTORVM^o 

R. Lis 1st and 3rd quarters.

+ DH S^oP T^oCTOR MS+LI BER^oTO
VILL ^oEDI ^oHBV^o RG^oh^o 

All the groats figured by Burns read GR^oACI^o in full, and whereas the unbarred II formed of two I's is characteristic of the issue (Burns, p. 63), this coin has the H's barred. Burns figures two demies (figs. 498 and 499) with barred H's, but the plates do not bear out this point and the H's on them are, in fact, unbarred. There is another specimen of this last groat in the collection of Dr James Davidson.

(4) GILBERT KIRKWOOD'S MARK ON A GOLD COIN OF JAMES V.

In the *Proceedings of the Society*, 1934-5, p. 11, fig. 2, there is an enlarged reproduction of the marks on the Communion Cup of the Kirk of Dalry, Ayrshire. One of these marks is a peculiarly shaped shield containing the letters G K in monogram. This mark is stated to be that of Gilbert Kirkwood, who was deacon 1623-5.

There is an interesting gold coin in the National Collection which is illustrated by Burns (fig. 725). The coin is a reproduction in gold, probably a cast, of a VILL^o EDINBRVGH^o × silver groat of James V. Burns says of it: "The supposed pattern Ryal, Lindsay, Pl. xiii., fig. 38, formerly in the Advocates', now in the S.S.A. Collection, is simply an impression in gold of the groat No. 24. The letters G K behind the head—not C K as represented by Lindsay—have been punched in subsequently." He does not, however, tell us to whom these initials belong. On examination of the coin in question it is clear that the stamp is identical with that on the Dalry Cup. Lindsay gives the weight of the coin as 279 grains, but in the Catalogue of the National Collection (fig. 98) it is given as 235 grains. The average weight of the ordinary silver groat is about 41 grains.

It is difficult to explain why this coin was made, unless for use as a pendant, and even more difficult to explain why, having been made, it should be defaced by the mark of Gilbert Kirkwood, who flourished in the next century.

MONDAY, 14th February 1938.

THOMAS YULE, W.S., Vice-President, in the Chair.

A Ballot having been taken, the following were elected Fellows:—

Colonel H. C. AGNEW, Bonjedward House, Jedburgh.

JOHN HOPE CAMPBELL, W.S., 31 Moray Place, Edinburgh, 3.

The Rt. Hon. T. M. COOPER, K.C., M.P., The Lord Advocate, 7 Abercromby Place, Edinburgh, 3.

THOMAS TORRANCE CROSGROVE, Southlands, 28 Midlothian Drive, Shawlands, Glasgow.

Professor J. DUNCAN MACKIE, M.C., M.A., 9 The College, The University, Glasgow.

Miss JUDITH D. GUILLUM SCOTT, Honorary Secretary of the Southern Provincial Committee of the Central Council for Care of Churches, 94A Cromwell Road, South Kensington, London, S.W. 7.

W. S. KENNEDY SMITH, D.A., Ayr Academy, Ayr.

FRANCIS G. SUTHERLAND, W.S., 2 Arboretum Road, Edinburgh, 4.

WILLIAM JAMES STIRLING WALKER, Ph.D. (Edin.), A.H.-W.C., F.I.C., F.R.S.E., c/o Mrs Harrison, 64 Sandtoft Road, Charlton, London, S.E. 7.

The Chairman made reference to the gift by Her Majesty Queen Mary of a Bronze Medal commemorating the visit of George IV. to Edinburgh in 1822. A special vote of thanks was accorded to Her Majesty.

The following Donations to the Museum were intimated and thanks voted to the Donors:—

(1) By HER MAJESTY QUEEN MARY.

Bronze Medal commemorating the visit of George IV. to Edinburgh in 1822. The medal has been cut and formed into a case which contains the chronology of the sovereigns of England from William the Conqueror to Edward V.

(2) By ANGUS GRAHAM, F.S.A.Scot.

Perforated Stone, flat, pear-shaped, measuring $6\frac{7}{8}$ inches by $5\frac{3}{8}$ inches by $1\frac{1}{4}$ inch, the hole countersunk from both sides. From the Ellon district, Aberdeenshire.

(3) By A. D. LACAILLE, F.S.A.Scot.

Bronze Pin, and fragments of Clay Vessels. From Berie Sands, Valtos, Lewis. (*Proceedings*, vol. lxxi, pp. 293 and 295).

A Collection of Flint Implements, Palæolithic and Neolithic, from various localities in England and France:—

Five early Clactonian Flakes from Iver, Bucks.

Four Levallois Flakes (surface finds) from near Fismes, Marne.

Eleven Mousterio-Aurignacian Cores and Implements from Chez Pouret, La Pigeonie, Brive-la-Gaillarde (Corrize).

Five Solutrean Cores from Champs Blanc.

Six Languedocian Flakes and Flake Implements from Saint Char, Haute Garonne.

Four Picks, two Cores, and five Flakes. Montmorencian (early Neolithic), from Forêt de Montmorency, Piscop, Seine-et-Oise.

Three Flint Scrapers, measuring $1\frac{11}{16}$ inch by $1\frac{1}{16}$ inch by $\frac{9}{32}$ inch, $1\frac{7}{8}$ inch by $1\frac{19}{32}$ inch by $\frac{3}{8}$ inch, and $1\frac{27}{32}$ inch by $1\frac{7}{16}$ inch by $\frac{15}{32}$ inch, from Burnham, Bucks.

Two Flint Scrapers, measuring $1\frac{31}{32}$ inch by $1\frac{3}{16}$ inch by $\frac{11}{32}$ inch, and $2\frac{7}{32}$ inches by $1\frac{21}{32}$ inch by $\frac{7}{16}$ inch, from Lakenheath, Suffolk.

Scraper of Flint with light grey patination, measuring $1\frac{3}{4}$ inch by $1\frac{7}{16}$ inch by $\frac{11}{32}$ inch, from Caterham, Surrey.

(4) By WALTER G. GRANT, F.S.A.Scot.

Rudely made Needle of Lead, measuring $2\frac{1}{4}$ inches in length, found beside the wall on the seaward side of the Cairn at Rowiegar, Rousay, Orkney.

Various relics from Orkney: (1) Circular Bowat Candle Lantern of iron, with windows of sheet mica; (2) old hollow ground Razor with tortoiseshell handle, in a wooden case; (3) Crimping machine of iron; (4) Wooden Panel with Arms of George III.; (5) Snuff Quern, the upper stone being roughly circular and measuring $8\frac{5}{8}$ inches by $7\frac{1}{2}$ inches in cross diameters, the lower stone irregularly shaped and measuring $16\frac{7}{8}$ inches in length, $10\frac{7}{8}$ inches across the perforation, and $3\frac{1}{2}$ inches in thickness; (6) carved Stone, grooved longitudinally, believed to have been a stand for holding culverin balls (fig. 1), measuring 5 feet $5\frac{1}{2}$ inches in length, $6\frac{1}{2}$ inches in height at one end and $5\frac{5}{8}$ inches at the other.

Silver Ornaments from the Hoard found at Skaill, Orkney (fig. 2), in 1858: (1) Neck Ring, $4\frac{7}{16}$ inches in diameter, formed of three inter-twined rods; (2) penannular Armlet, $2\frac{31}{32}$ inches in greatest external

diameter, made of a solid rod of silver, $\frac{1}{4}$ inch thick; (3) flattened Band of Silver, pointed at both ends. $8\frac{9}{16}$ inches in length; (4) Pin. $7\frac{7}{8}$ inches

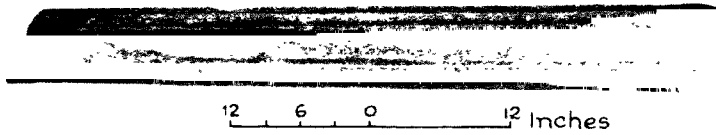


Fig. 1. Carved Stone from Orkney, believed to have been a stand for holding culverin balls.

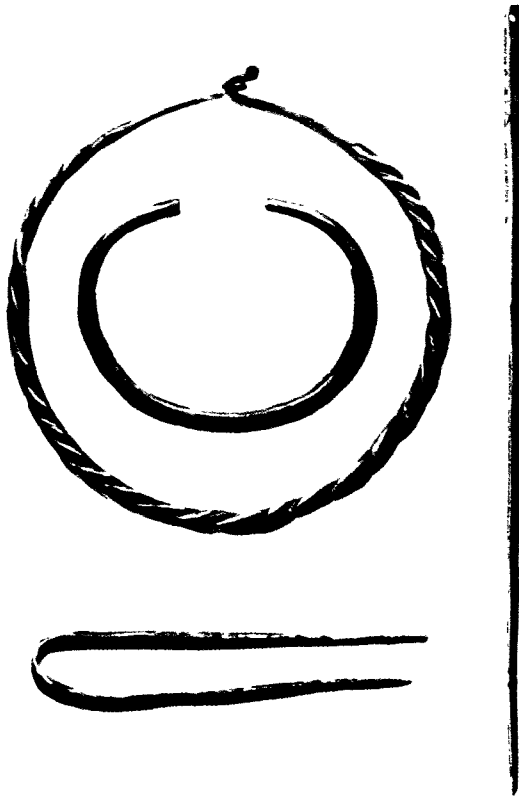


Fig. 2. Silver Ornaments from Skaill. ($\frac{1}{2}$.)

long, the head rectangular and pierced by a small hole, probably for a ring, the upper half of the shank rounded, the lower flattened, drawing gradually down to a point.

(5) By Mrs ARCHIBALD CAMPBELL, late of Easter Warriston.
Congreve Wooden Match-box.

(6) By Miss MORHAM, 17 Mansionhouse Road, Edinburgh.
Map of Prince Charles Edward's Itinerary in 1745-46. printed on linen. The map is of Great Britain, with part of the north of France.

(7) By Sir ARTHUR H. GRANT, Bart., of Monymusk.
Fragments of the upper portion of a vessel of dark reddish clay, probably a cinerary urn. The vessel appears to have been of the bucket type. as there is no indication of an overhanging rim. From Monymusk, Aberdeenshire.

(8) By T. A. WALLACE, 6 Allan Terrace, Dalkeith.
Fragment of a Cauldron of Bronze, found 3 feet below the surface at Woodburn Housing Estate, Dalkeith.

(9) By JAMES S. RICHARDSON, F.S.A.Scot.
Three-pronged Fish Spear of iron.

(10) By Rev. DOUGLAS G. BARRON, O.B.E., V.D., D.D., F.S.A.Scot.
Flint-lock Spring Gun for use against poachers. The gun measures 1 foot 8 inches in total length, and is made of wood and iron. The name SEARLES is stamped on the lock. From Stirling.

(11) By Miss CHRISTIE of Cowden, F.S.A.Scot.
Hand Yarn Winder and a Bobbin Yarn Winder in teak frame.

(12) By Mrs NEWTON of Rahoy.
Relics from the Vitrified Fort at Rahoy, Morvern, Argyll. (See previous communication by Professor Childe and Mr Thorneycroft.)

(13) By WALLACE THORNEYCROFT, F.S.A.Scot.
Specimens of Vitrification produced experimentally at Rahoy Fort, Morvern, Argyll, and at Plean Colliery, Stirlingshire.

(14) By the Most Hon. The MARQUESS OF LOTHIAN, C.H.
Large Cinerary Urn with overhanging rim and constricted neck. The base is wanting and the urn has been partly made up. It is made

of a light reddish clay, and now measures 1 foot $1\frac{1}{4}$ inch in height, the original height being probably about 1 foot 8 inches. The external diameter at the mouth is 1 foot 3 inches, at the lower part of the rim 1 foot $4\frac{1}{2}$ inches, and at the bulge 1 foot $5\frac{1}{8}$ inches. The lip is slightly bevelled downwards towards the inside, and the rim is decorated with inverted triangles hatched horizontally and obliquely alternately. Encircling the

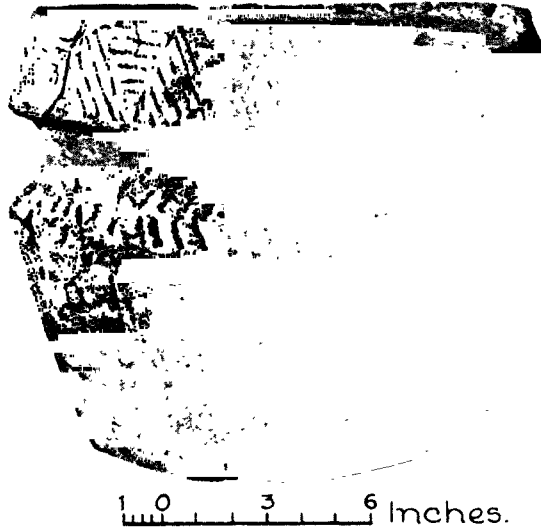


Fig. 3. Cinerary Urn from Monteviot, Roxburghshire.

urn at the bulge is an irregular chevron design, with some of the chevrons facing one way and some another. Found near Monteviot, Roxburghshire, by Dr Phene, F.S.A., in 1871.

(15) By CHARLES E. WHITELAW, F.S.A.Scot.

Heavy Musket or Wall Gun. The barrel, the only original piece, dates from about 1640. The Musket is 5 feet $11\frac{3}{4}$ inches long, with an octagonal muzzle, slightly bell-mouthed, and a raised back sight cut with a sighting notch. It probably came from Aberdeenshire.

(16) By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the Museum.

Stone Axe, dark green schist, finely polished, measuring $1\frac{15}{16}$ inch

in length, $1\frac{5}{16}$ inch in breadth, and $\frac{5}{16}$ inch in thickness, from Ak Serai.

Stone Axe, olivine basalt, measuring $1\frac{7}{8}$ inch in length, $1\frac{1}{4}$ inch in breadth, and $\frac{5}{8}$ inch in thickness, from Kazilene, Isauria, Taurus Mountains, purchased by the donor from the finders in Asia Minor, in 1907 (see *Proceedings*, vol. xlii. p. 222, figs. 1 and 2).

Axe of greenstone, measuring $1\frac{15}{16}$ inch in length, 1 inch in breadth and $\frac{17}{32}$ inch in thickness, from the Axylon.

Bronze Spear-head with a broad flat tang and slight flanges, believed to be unique, the point and tang imperfect, measuring 5 inches in length, $\frac{3}{4}$ inch in breadth, from Ak Serai on the eastern boundary of the Axylon, Asia Minor.

Glass Bead, inlaid with wavy lines of yellow, white, and brown, measuring $\frac{17}{32}$ inch in diameter and $\frac{9}{32}$ inch in thickness: oval Bead of dark coloured glass, with two bands of light colour encircling it cross-wise, measuring $\frac{9}{16}$ inch by $\frac{15}{32}$ inch by $\frac{5}{16}$ inch: and circular Bead of blue glass, with a decorative inlay of three sets of concentric circles in yellow, blue, and white, measuring $\frac{13}{32}$ inch in diameter and $\frac{9}{32}$ inch in thickness. All from Kara Kuyu, Pisidia, Asia Minor.

Wooden case for a Jew's Harp, rudely cut out of the solid, measuring $2\frac{13}{16}$ inches in length. The initials A. G. are cut on the lid, and on various parts of the body I. G. four times and the date 1781. On the pillar end there is criss-cross ornament. Bought in Aberdeen by the donor.

- (17) By the Town Council of Bonnyrigg and Lasswade, through R. MONCRIEFF, Secretary, Board of Trustees, National Galleries of Scotland.

Food-vessel Urn of the Bronze Age (fig. 4), the clay well fired and reddish, height $6\frac{1}{2}$ inches, diameter at mouth $6\frac{1}{2}$ inches, at base $3\frac{1}{2}$ inches, the lip 1 inch in breadth, concave, and sloping inwards; there are four lines of impressions, three having been made with a pointed knife, and the bottom one with a blunt point. The whole of the exterior is decorated with impressed lines, which encircle the urn. The lines are irregularly placed, and have been made with a round-ended instrument. About $1\frac{1}{4}$ inch from the bottom the decoration consists of vertical lines of impressions made with a blunt-edged tool. Found at a depth of 6 feet, in making a hole for a flagpole on the top of Dobbie's Knowe, Bonnyrigg, 1937.

The following Purchases for the Museum were intimated:—

Fifty-four Bookbinders' Tools.

Stone for making Henching Balls, measuring $8\frac{1}{2}$ inches by $7\frac{1}{4}$ inches by $3\frac{3}{8}$ inches, with hole, 4 inches in diameter at the top, tapering to $1\frac{1}{4}$ inch.

Perforated Stone Hammer with rounded ends, $3\frac{1}{4}$ inches in length, $2\frac{1}{16}$ inches in width, and $1\frac{3}{8}$ inch in thickness at the broad end, and $1\frac{15}{16}$ inch in width and $1\frac{7}{32}$ inch in thickness at the narrow end. The perforation, $\frac{7}{8}$ inch in diameter, is placed near the small end. Found at Westhill, Culloden.

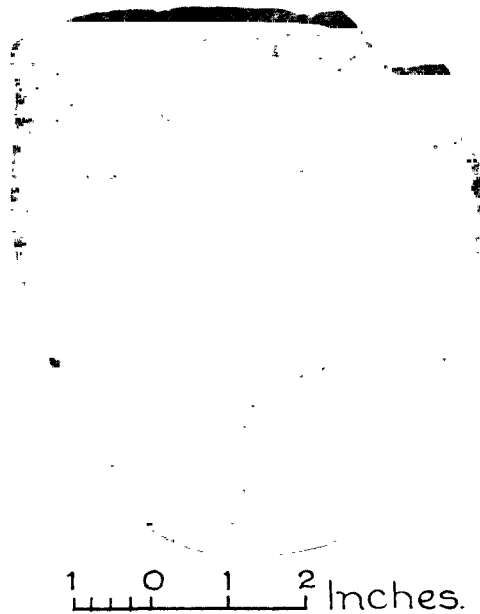


Fig. 4. Food-vessel from Dobbie's Knowe, Bonnyrigg.

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By HIS MAJESTY'S GOVERNMENT.

Calendar of State Papers. Domestic Series, William III., 1st April 1700–8th March 1702. London, 1937.

Calendar of the Close Rolls. Henry VI. Vol. iii. 1435–1441. London, 1937.

(2) By THE SOCIETY OF FRIENDS OF DUNBLANE CATHEDRAL.

The Book. Vol. ii., part iv. 1937.

(3) By THE DIRECTOR.

Bulletin of the Russell-Cotes Art Gallery and Museum. Vol. xvi. December 1937.

(4) By GILBERT ASKEW, F.S.A.Scot., the Author.

The Medals of the Northumbrian Bag-Pipes. Gateshead-on-Tyne, 1938.

(5) By Professor T. CALLANDER.

La Société Guernesiaise. Report and Transactions, 1936. Guernsey, 1937.

(6) By Sir GEORGE MACDONALD, K.C.B., LL.D., President.

Proceedings of the Devon Archæological Exploration Society, 1936. Vol. ii., part 4.

Ein Dakisches Relief aus der Dakenburg von Gradistea—Muncelului—Alex. Ferenczi—Deva. 1937.

Die Haupttypen der Kaiserzeitlichen Fibeln in Pannonien. By Ilona Kovrig. Budapest, 1937.

(7) By Miss V. C. C. COLLUM, F.S.A.Scot., the Author.

Iron Hammer from the Déhus Megalithic Chambered Mound. Vale Parish. Reprint from Transactions of La Société Guernesiaise, 1936.

(8) By J. A. STEERS, M.A., Dean of St Catherine's College, Cambridge, the Author.

The Culbin Sands and Burghead Bay. Reprinted from *The Geographical Journal*, vol. xc., No. 6. December 1937.

(9) By JOHN MOWAT, F.S.A.Scot., the Author.

Old Caithness Maps and Map Makers. Reprinted from *John O' Groat Journal*. Wick, 1938.

(10) By Hr. Professor Dr phil. HAAKON SHETELIG, Hon.F.S.A.Scot., the Author.

Islands Graver og Oldsaker fra Vikingstiden. Reprinted from *Saertrykk av Viking*, 1937.

(11) By J. GRAHAM CALLANDER, LL.D., F.S.A.Scot., Director of the Museum.

Der Dolmen bei Langen Kr. Lehe. By Hugo Mötefindt. Reprinted from *Jahrbuch der Männer vom Morgenstern*. 1913–1914.

The following Communications were read:—

I

EXCAVATION ON A VIKING SETTLEMENT AT FRESWICK,
CAITHNESS. By ALEXANDER O. CURLE, C.V.O., LL.D.,
F.S.A.Scot.

A preliminary report was read. A full report will be published in next year's *Proceedings*.

II

A BRONZE BOWL FROM THE RHINNS OF GALLOWAY. By
THE REV. R. S. G. ANDERSON, B.D., F.S.A.Scot.

Early in 1937 a ploughman on the farm of Awhirk, in the Rhinns of Galloway, while at work, struck what seemed to be the green rounded



Fig 1. Bronze Bowl from Awhirk.

top of an embedded stone. The plough glanced off, but on the return furrow it collided with the same obstacle more directly, and wrenched it out of the peaty land. Examination proved the object to be a metal bowl that had been lying inverted in the soil (fig. 1). That the bowl was

only slightly indented and bruised, not burst open, speaks well for the quality of the bronze of which it was made. As the metal was badly tarnished, the finders concluded that it was only a worn-out utensil thrown away by its owner as useless; and for weeks it was allowed to lie in the open by the edge of the field. Fortunately the farmer, who had been disposed to think that the bowl might have some antiquarian interest, decided to put it in a place of safety, and to make inquiries as to its origin and use.

Awhirk is a farm on the watershed of the Rhinns, where this promontory divides the Irish Channel from the northern end of Luce Bay, the site of the farm being a little more than half-way on a line from Portpatrick to Stoneykirk village. The whole district is a jumble of low grassy hills, rounded by glacial action, and with irregular patches of level land in the intervening hollows. Near the north-eastern corner of such a basin that stretches for about half a mile in length and is a few hundred yards wide, the farm buildings of Awhirk stand on the foot of the encircling slope, with little more than the road separating them from an ancient moss which is now being brought under cultivation. This would originally be a lochan draining the seepage from the hills around, and discharging the overflow at both east and west ends. The gathered drift of the ages, as well as the living and decaying vegetation, would gradually choke the hollow so that it ended as bog and peat moss. On the south side of this moss, now a field, and a little farther west than the farmhouse, there is a bit of rising ground that may also have been islanded by bog in early days, but too high ever to have been covered by it. From this there runs a sharp spur into the field where a large number of bleached stones lie scattered for several yards out, evidently the relics of an ancient causeway disturbed by the plough. This seems to have ended at a circular stone platform, probably the site of a primitive hut. But there is no sign that this site was connected with the knoll at some distance to the north-east, where the bowl was found.

During its most recent phase, owing to drainage and evaporation, the moss has been shrinking, so that the surface of the field which was once almost level has become more undulating, and one knoll of considerable size has been disclosed almost in front of the farm buildings, and 40 or 50 feet to the south of the road. It was on the inner slope of this knoll, where the surface has sunk $4\frac{1}{2}$ feet in 17 years, that the inverted bowl was found suspended in the soil about three feet above the till, with its base just visible above ground. Owing to the field being under cultivation there was no opportunity for further exploration

at the time. Rumour speaks of a crannog having been found in the Rhinns, and says it was destroyed by a farmer unwittingly; but there is no certain evidence of a crannog here. A large number of oak-tree roots line the road alongside the field, evidently drawn from the old moss, all the trunks having been sawn off. Only two or three pieces of the trunks remain, and these are quite plain. There are no signs of any framework, and no tool-marks save those of the saw, and none of the older men could remember seeing any.

The Awhirk bowl is a simple bowl of hammered bronze, made from a single sheet of metal, almost $\frac{1}{16}$ of an inch in thickness. In shape it is the half of an oval, clean cut across, without any rim or handles; the diameter of the mouth varying from $18\frac{1}{2}$ inches to 21 inches, and the circular measurement of the lip 62 inches. It stands 11 inches high, and weighs $7\frac{1}{2}$ lbs. The base is rounded, but so well balanced is the bowl that without support it stands almost vertical. Though somewhat flexible owing to the thinness of the metal, it is strong and durable. There is nothing in the way of ornament, unless the hammer-marks that make a broad band round the lower part of the exterior can be so called.

The most distinctive feature of the Awhirk bowl is a small perforation in the centre of the rounded base. It is circular, almost $\frac{1}{8}$ inch in diameter, and has evidently been bored from the interior, as a slight fur can still be felt on the outside. A finely incised circle also surrounds the opening. The bowl is evidently a clepsydra, or water-clock; and as such is in a separate category from the other cauldrons in Scotland, which in all likelihood were intended for culinary purposes or brewing.

The clepsydra was at first a very simple affair—a plain bowl with a small perforation in the base, which could be floated on water and gradually filled by percolation till it finally sank—an attendant noting the time taken to fill, and the number of refills needed in a given period. Aristophanes (died 380 B.C.) mentions a water-clock in which the water ran gradually from one vessel into another. Presumably the under vessel would be graduated for hour measurement. In later days the clepsydra became more complicated in its mechanism: means having been devised to correct weaknesses inherent in the early system. It was 135 B.C. before Ctesibius of Alexandria invented a water-clock that would register accurately.¹ Caesar was perhaps contrasting something of this kind with primitive styles still in vogue, when he wrote of measuring time in Britain by “accurate water-measures.” Clepsydræ continued in use in Britain till about the eleventh century, but cauldron-clepsydræ existed only in a few centuries before and after the beginning of our era.

¹ Vitruvius, ix. 9; Pliny, *Hist. Nat.*, vii. 125.

The technique of hammered-bronze work which is distinctive of the Late Bronze Age—Hallstatt complex on the Continent—is held to be the precondition of that Greek and Roman blend which was to provide the models for the cauldrons of the British Late Bronze Age.¹ The clepsydra was not invented early enough to be connected with this type since the Late Bronze Age in England closed about 500 B.C. It is only in the Iron Age that it is found in England represented by a bronze cauldron of a modified Carlingwark Loch type. The find was made at Baschurch, Shropshire; the cauldron being hammered up complete from sheet bronze, and not built up of several plates like the parent type. Two or three other clepsydræ, of similar shape but much smaller, have been found in Suffolk and the south of England.² It was in Suffolk also, at Santon Downham, that the large cauldron of the Carlingwark type was found with a mixed hoard of Celtic and Roman tools and ornaments. The location of the various finds suggests that this type of cauldron may have come to Britain from the Continent, from the coasts opposite. It has been found there "as far north as Denmark, and Willer illustrates specimens from Hemmoor, Hanover, and Korchow in Mecklenburg. He takes the view that they come from the south, either from Italy or the country behind Apuleia."³ With this history it is very probable that the knowledge of the clepsydra, as well as the modified cauldron-clepsydra, arrived by this route. This does not preclude it having reached this country by a more westerly route also.

Clepsydræ have been found with cauldrons of the Blackburn Mill type, which were almost contemporary with the Carlingwark type of vessel. The former may, indeed, be a sub-type from the same source. At Walthamstow, Essex, there was found a cauldron-clepsydra, hemispherical, with traces of an iron band that had once been attached to the rim by rivets. Its dimensions were: diameter, $14\frac{3}{4}$ inches; height, $7\frac{1}{2}$ inches. A cauldron at Battersea had practically the same shape and size, the latter being: diameter, $14\frac{3}{4}$ inches; height, $7\frac{3}{4}$ inches.⁴ The Blackburn Mill cauldrons are much the same in shape, and have the characteristic rivet holes on rim and sides. The dimensions of the smaller one are: diameter, 13 inches; height, $7\frac{1}{2}$ inches, corresponding very nearly to those of the Walthamstow vessel.⁵ Along with this cauldron at Blackburn Mill there was a larger one of the same type:

¹ Childe, *Prehistory of Scotland*, p. 158.

² Smuth, *Proc. Soc. Ant. Lond.*, vol. xxi. p. 319, 2nd Ser.

³ Curle, *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 310.

⁴ *Proc. Soc. Ant. Lond.* vol. xxi. p. 319, 2nd Ser.

⁵ *Proc. Soc. Ant. Scot.*, vol. i. p. 43; *ibid.*, vol. lxvi. p. 314.

diameter, 21 inches; height, 10 inches; and it is interesting to note that at Walthamstow also a second large cauldron was found, measuring: diameter, 19 inches; height, 10 inches. At Kyleakin, Skye, a cauldron of similar design was found, measuring 18 inches in diameter and 12 inches in height. These various vessels have a close family resemblance. Their sites lie near to the coast, and are open and convenient to the traders from the same coastlands who may have provided the Santon Downham and Baschurch types. All the vessels are made of the characteristically thin, paper-thick bronze. Each of the two groups has provided a clepsydra, but none that show kinship with the Awhirk bowl, which can be described as hammered up from a sheet of (comparatively) thick bronze; its outline a simple arc, with its greatest diameter at the lip; and with no accessories, such as added rim and handles.

Though the Late Bronze Age closed in England some time before 500 B.C., its technique persisted in Ireland till almost 200 B.C.¹ A clue to the origin and design of the Awhirk bowl may be found in this fact. Among the earliest cauldrons there is a range of forms varying from the globular through varying curves to the conoid. One in the Belfast Museum from an unknown locality has the curves of its bowl a little fuller than those of the Awhirk specimen, and another from Portglenone has the curves only a little sharper. The bowl of the bronze cauldron from Hattenknowe, Peeblesshire,² has outlines very similar to those of the Awhirk find. It is in all likelihood an Irish-made cauldron, for Ireland supplied many to Britain. Its greatest diameter is 21 inches; its height 15½ inches; and its circumference at widest is 61¾ inches. The Awhirk bowl is 21 inches in diameter, and 62 inches in circumference at the lip. It bears to the Hattonknowe type of cauldron practically the same relationship that the Baschurch bowl does to the Carlingwark type. By the close of the Late Bronze Age in Ireland, the cauldrons were losing their large ring-handles and rims. The Awhirk bowl, which is of the Iron Age, is 11 inches in height, but with an added rim and shoulder of the Hattonknowe type it would probably have reached the 15½ inches of the latter. The change over from the technique of cauldrons built up of separate plates to that of the complete bowl hammered up from sheet bronze, as in the Baschurch type, is seen here also. But the earlier technique still lingers in the thick sheet bronze, which is a marked feature of the Awhirk bowl, in contrast to the paper-thin bronze of the Iron Age bowls found on the eastern side of the Irish Channel. Like

¹ Leeds, *Archæologia*, vol. lxxx, p. 29.

² *Proc. Soc. Ant. Scot.*, vol. xxxix, p. 15.

the Hattonknowe cauldron, the Awhirk one has been made of light-coloured bronze.

It seems probable that the unusual shape of the Awhirk bowl may be due to its having been originally designed for a clepsydra. The other cauldron-clepsydræ we have noticed could have been merely adaptations of the ordinary bowls of commerce. Cauldrons with in-turned rims, or bulging towards the base, would be much less suitable for frequent lifting when full, and emptying, than this Awhirk type, which would empty itself as it was lifted or pulled out at an angle from the water.

The Awhirk bowl may have come from Ireland to the Rhinns, and might be dated to the end of the second century, or in the first B.C.

III.

CUP- AND RING-MARKINGS ON CRAIG RUENSHIN, WITH SOME COMPARATIVE NOTES. BY ALISON YOUNG, F.S.A.Scot.

These preliminary notes make no pretence of offering a complete classification or chronology of carvings, but are in the main a record. On an outcrop of schistose rock running north-east and south-west, just above the 800-foot contour at Craig Ruenshin above Birnam, are two sets of cup-markings associated with concentric rings and channels. I have been enabled to study these through the courtesy of Mr Donald Stewart Fotheringham of Murthly Castle. The site commands an extensive prospect. Across the Tay to the north rises the Deuchry and the wide sweep of the Grampians. On the east there is an uninterrupted view to the Sidlaws, in fact, "Great Birnam Wood to high Dunsinane Hill." The steep slope of Craig Ruenshin rises a few hundred yards to the west, and to the south the ground falls away to Birnam Burn.

The larger group of carvings (fig. 1) is on a flat piece of living rock measuring $9\frac{1}{2}$ by $7\frac{1}{2}$ feet. There is a slight rise to the south, where the smaller group is found on a tilted rock face. The larger group comprises twenty cups, nine surrounded by circles. One cup is encircled by two concentric rings, a second by three rings, and a third

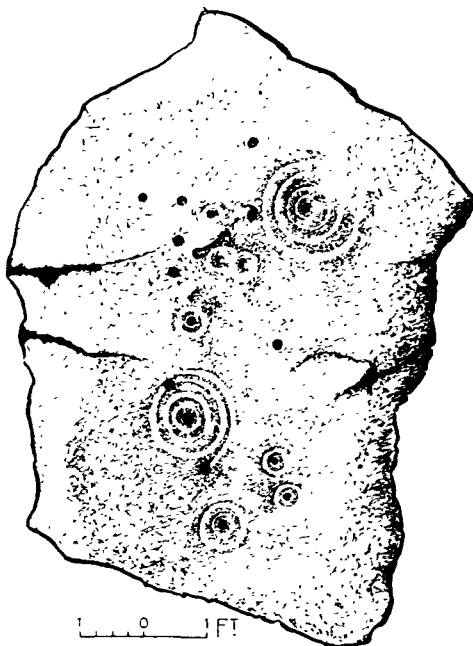


Fig. 1. Carved Rock Surface at Craig Ruenshin.

by three rings and a fourth ring only partly discernible. In the last case there is a cup in the third ring and another in the remains of the fourth. There are some vestiges of channels from the cups through the circle, but the whole is badly weathered.

The smaller group (fig. 2) consists of eight cups, twice associated with circle and channel, twice with a circle only, and twice with two circles and a channel which in one instance ends in a cup. These markings are also weathered, but less than in the first group, perhaps because of the slope of the rock which faces south and drains freely. Between the two groups there are a few cup-marks at one point; these have

been covered with earth and are well preserved. The cups are unequal in size and depth, and none of those that I have found are ringed. On the same ridge of rock, 340 yards to the north, is the group of markings described by Mr Thomas MacLaren in the *Proceedings*, vol. liv. p. 207. These cups are very much deeper and some are surrounded by a single ring.



Fig. 2. Carved Rock at Craig Ruenshin.

Cup-marks combined with concentric rings are not peculiar to the northern part of Great Britain, though more numerous here and in Ireland than in the South. The patterns include one or more rings round a central cup, with or without channels from the centre to the edge of the rings or beyond in straight or curved lines, joining another cup or cup-and-ring group and are usually associated with

unringed cups of various sizes. As there are so few methods of classifying groups of markings such as those at Craig Ruenshin, it may be of interest to note some other associations of these symbols, particularly in the counties of Perth and Angus.

As the first group we may take the carved rocks. Many are known throughout Scotland, and probably many more are covered by turf or so weathered as to pass unnoticed. Whatever their symbolism may imply, these are valuable evidence; for on them alone can we be certain that the carvings are in their original context.

In Perthshire there is a series on the rock at Duncroisk in Glen Lochy¹ consisting of cups surrounded by one or two concentric rings. Associated with them are many deep cups arranged in rows. The whole complex is on a rocky outcrop in a field by the river. There are other

¹ *Proc. Soc. Ant. Scot.*, vol. xxix. p. 92.

sites along the north shore of Loch Tay and an interesting carved boulder at Braes of Balloch. Another natural rock covered with cups and concentric rings is exposed at Urlar (above Aberfeldy), where there are also rows of very deep cups as at Duncroisk.

In addition to natural rock-surfaces some cist-covers are carved with analogous symbols. Examples have been found at Craigie Hill (Midlothian),¹ Carlowrie (West Lothian),² Coilsfield (Ayrshire),³ and Tillicoultry (Clackmannan),⁴ and elsewhere. The slabs are reported to

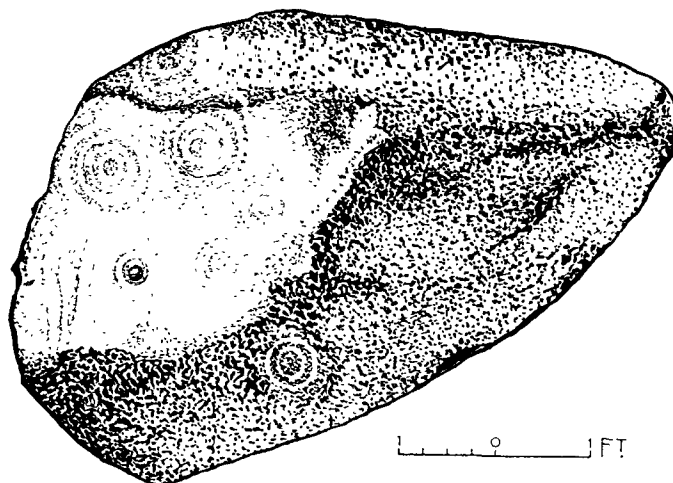


Fig. 3. Cover-stone of Cist at Tillicoultry.

have been carved on the side facing inwards. In two cases the associated funerary vases were early Food Vessels. The carvings are cups and rings combined with long channels running from the cups in some cases, *e.g.* at Tillicoultry (fig. 3). Here the carved slab (now removed to the grounds of Tillicoultry House) formed the capstone of a burial cist set at the centre of a stone circle at the Cuninghar. The burial was accompanied by a food-vessel (fig. 4) of early type with pierced lugs. Unfortunately the sandy hillock on which the monument stood was dug away, the burial circle and the embankment demolished, and the carved granite slab (fig. 3) is all that remains. The drawing made by Col. Montgomery in 1785 of the Coilsfield Stone shows wavy lines reminiscent of those from the burial mounds on the plain of the Boyne;

¹ *Proc. Soc. Ant. Scot.*, vol. vi., Appendix, p. 28.

² *Ibid.*

³ Munro, *Prehistoric Scotland*, p. 221.

⁴ *Proc. Soc. Ant. Scot.*, vol. xxix, p. 192.

to these there is another Scottish parallel on a slab forming part of the roof of an earth-house at Barns of Airlie, Angus. In connection with cist-covers it should be noted that the position of the carved stones was the same in each case, so that their use was not haphazard, though it is not proved that the artist originally carved them as grave-covers.

Other cup- and ring-marked stones, now known only as isolated boulders lying with a broad inscribed surface upward, may well be cist-covers moved from their original positions in field work or in digging

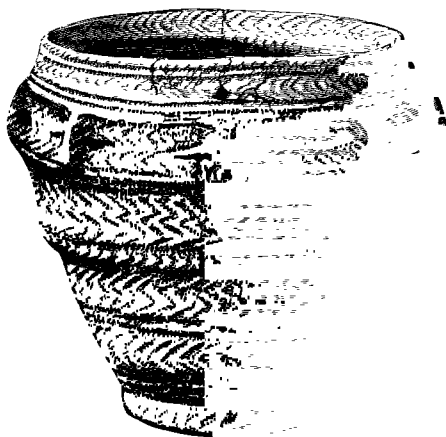


Fig. 4. Food-vessel Urn from Cist at Tillicoultry.

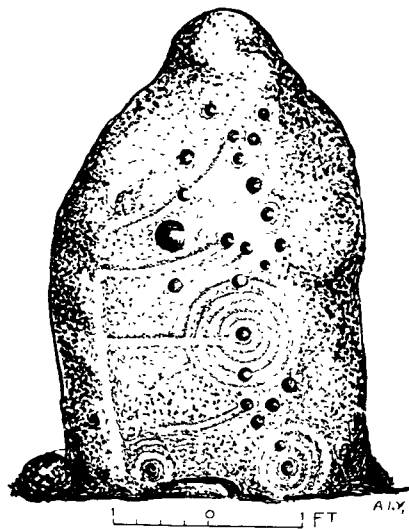


Fig. 5. Standing-stone, Gladsfield.

sand-pits. One such slab at Malling on the Lake of Menteith is called the Peace Stone, and it may be significant that many of these isolated stones are named or have preposterous legends attaching to them. On the Malling stone a double cup is surrounded by one set of rings and long channels run over the edge. At Braes of Cultullich (near Aberfeldy) another carved stone lies on a small hill among some boulders; one of these too is inscribed with deep cups, and a hundred yards away is a rock marked with one cup of unusual size together with various more normal ones.

A third group appears to be formed of single standing-stones ornamented with cups, rings and channels. These too may be the remains of more complicated monuments. An interesting example is the so-called Gladsfield Stone (fig. 5) on Newbiggin Farm (Cargill, Perthshire).

One face of this roughly pointed monolith is covered with cups and

a series of concentric rings, many joined to a main stem or channel (fig. 5). An owl-like or rude anthropomorphic figure can be very plainly seen on this stone and can also be discerned on stones at Braes of Cultullich (near Aberfeldy) and Monzie (near Crieff). Among several analogies on pottery I should like to draw attention to vases illustrated in the *Proceedings*, vol. xxxvi. pls. 1 and 4. This pattern is discussed by M. l'Abbé H. Breuil in his Presidential Address to the Prehistoric Society of East Anglia for 1934, where he deduces a close affinity between

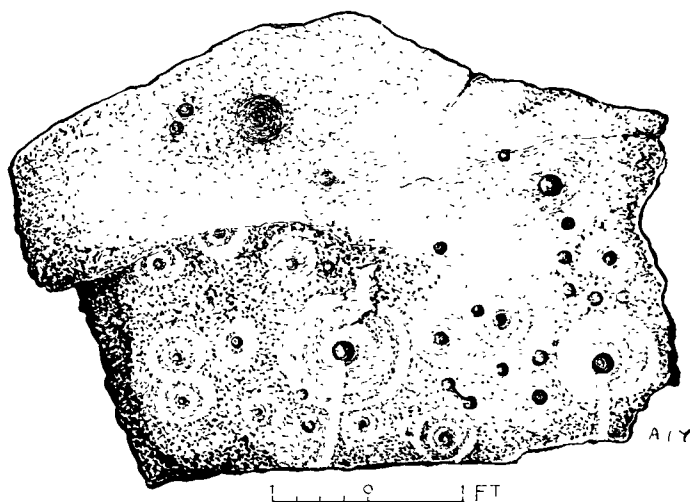


Fig. 6. Stone outside Circle at Monzie.

the Iberian art and the Irish and in a lesser degree the English and Scottish. The Gladsfield Stone has probably been moved and stands close to the field of Moonshade Butts, to which is attached the legend of a stone circle buried in the interests of agriculture and where a rock outcrop bears cup-marks.

Another Perthshire stone at South Friarton (Scone parish) is known to have been moved from the centre of the field on the verge of which it now stands. Mr MacLaren brought this stone to my notice and told me that a former proprietor had moved it. Now broken across some of the cups, it was once certainly longer than it is now and may have stood upright though its position cannot be determined with any certainty. Solitary boulders are unsatisfactory evidence; being easily moved, there can be little proof of their original site or association.

A fourth group comprises cup- and ring-marked stones near a circle,

but not forming part of it. A good specimen is seen at Monzie,¹ with the double ring or owl face showing clearly (fig. 6). The finest example of such stones is at Salkeld in Cumberland where Long Meg, a sandstone monolith about 16 feet high, is covered with cups and circles on the lower part of one face. A few yards away is a circle of sixty-seven huge stones, the whole forming an imposing monument in wonderful upland surroundings. But though these carvings appear to be connected with the circle near which they are found, it is difficult to decide whether they are contemporary with the original setting; excavation might prove this.

Fifthly, carved stones appear in connection with underground

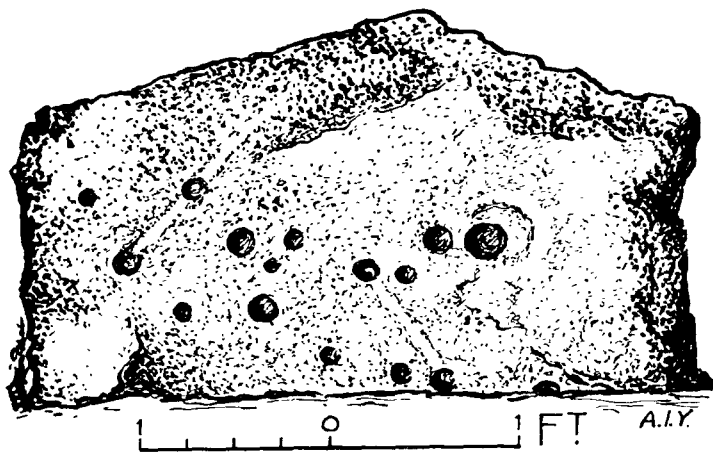


Fig. 7. Stone in Passage of Earth-house, Pitcur.

dwellings or weems. Here they have their appointed places as integral parts of the structures at the doorways or in passages. At Tealing (Angus)² an example of a cup with circles and channel is to be seen on the ground stone at the side of the entrance. Whether owing to the nature of the rock or to degenerate workmanship, it has a slipshod appearance. A heavily cupped slab devoid of rings lies beside the earth-house. The records of the excavations at the site give a varied assortment of finds which indicate occupation dating over a considerable period. The relics include stone cups, bronze rings, querns of mica-schist and free-stone spindle-whorls, and a fragment of Samian ware. The fact that the ringed stone appears to be part of the original structure would indicate that, whatever motive prompted its use as part of the building, it had importance at the earliest associable date.

¹ *Proc. Soc. Ant. Scot.*, vol. xvi, p. 91.

² *Ibid.*, vol. x, p. 287.

At Pitcur earth-house¹ two stones bear concentric circles while two others are cup-marked, one, heavily cupped, being built into the doorway of the inner room. A ring-marked stone (fig. 7) is in the passage between two galleries of this complicated building, while a great slab covered with engravings is supposed to have formed part of the roof and now lies face upward on the top of the weem.

These symbols of cup, ring and channel would appear to be of significance on rock-faces possibly in a serial connection, on downward facing cist-covers, therefore in association with the dead, and near stone circles in a funerary or other ritual connection. They are carved on stones used in a particular manner in structures wherein we find such evidences of domestic use as the stone cups, querns and whorls from Tealing Weem. Monuments found in varied sites and at varied contour lines, they represent a desire to record something worth exact and patient labour, show persistent ideas despite differences of presentation and workmanship, and appear to be a recognized form of thought transmission.

Apart from such conjectures, may they prove guides to the movement of a people who, in this country of contrasts, left their monuments alike on the seashore of Galloway and the Perthshire hill-face, on the bleak uplands and in the fertile straths?

¹ *Proc. Soc. Ant. Scot.*, vol. xxxiv, p. 202.

IV.

SCOTTISH LATE BRONZE AGE AXES AND SWORDS.

By WILLIAM HENDERSON, M.A., F.S.A.Scot.

The general purpose of this paper is to examine the major tools and weapons current in Scotland during the Late Bronze Age, namely, the socketed axes and leaf-shaped swords. The primary task has been to compile lists of all the socketed axes and swords of known locality from Scotland and to prepare maps showing their geographical distribution. From the main body of these two groups, distinctive types have been selected and by comparative study an effort has been made to establish reliable connections with areas outside Scotland. Our socketed axes and swords were not evolved here; in common with most of the Scottish Late Bronze Age metal types they originated beyond the boundaries of Scotland, and we are here concerned mainly with their immediate derivation and their subsequent diffusion throughout Scotland.

The sword and socketed axe are Continental types and cannot be regarded as further developments of our Middle Bronze Age rapier and palstave. Indeed, their appearance in Scotland had the effect of cutting short the development of the rapier and palstave before these had time to find general acceptance throughout the country. The distributions of the latter types, more markedly in the case of the rapiers, are concentrated in the southern half of the country,¹ in contrast to the widespread distribution of swords and socketed axes. This disagreement in distribution in itself serves to emphasise the discontinuity between these Middle and Late Bronze Age types.

Before proceeding to the analysis of our two groups, some explanation of the general character of the diffusion of metal types is necessary. How is the presence of Continental types in Scotland to be explained?

Their appearance here might be regarded as a result of invasion from the Continent. Much has been written in support of the theory that a series of invasions was responsible for the introduction of the new tools and weapons to Lowland England.² While certain elements in the Late Bronze Age culture of Lowland England may have been

¹ Childe, *Prehistory of Scotland*, p. 149.

² Crawford, "A Bronze Age Invasion," *Ant. Jour.*, vol. ii, p. 27; Peake, *The Bronze Age and the Celtic World*; E. E. Evans, "The Sword Bearers," *Antiquity*, vol. iv, p. 164; Kendrick and Hawkes, *Archæology in England and Wales 1914-1931*, pp. 119-121, 133-137.

introduced by actual invaders from the Continent, there remains the difficulty of correlating the metal types with any existing ceramic evidence of invasion.

In the early stages of this inquiry it seemed possible that evidence of Continental invasion of Scotland might be produced: it must now be recognised that on the evidence of the metal types there is practically nothing to suggest an invasion from the Continent, in the sense of a mass immigration.¹

Again, it is quite wrong to regard the presence of Continental types in Scotland as a result of regular importation. It is hardly likely that overseas trade was developed to such an extent that Continental types of tools and weapons were habitually imported ready-made in response to a demand for them.

The explanation is that, though the new tools and weapons which characterise our Late Bronze Age were based upon foreign models, they were nevertheless mostly of local manufacture. Clay moulds for their casting have been found from time to time. The recent discoveries at Jarlshof in Shetland afford definite proof that a highly developed technique of metal casting was practised there and that socketed axes and swords were actually manufactured on the spot in considerable numbers. Even such a rare type as the sunflower pin must no longer be regarded as an import to Scotland, since a mould for the head of such a pin ² is included among the numerous fragments from Jarlshof.

It remains to suggest how foreign influences had such a widespread effect upon the metal industry of our Late Bronze Age. The new fashions and improvements may have been first introduced to our islands by Continental smiths in search of the raw materials, tin and copper.³ After its first introduction, the new type of tool or weapon would serve as a model for subsequent manufacture, and this would bring about the diffusion of its inherent characteristics.

Promoting the general diffusion of the new types were the smiths

¹ To explain the presence of a number of bronze bracelets with Swiss parallels in the area lying between the Tay and the Moray Firth, Miss Benton has postulated at least one landing of invaders from the Continent on the shores of the Moray Firth (*Proceedings*, vol. lxxv, p. 203). The evidence for invasion seems scarcely convincing. In support of her claim she calls attention to the large number of swords from Eastern Scotland. If the swords and bronze bracelets are to be regarded as elements in the same invasive culture, their association in an eastern hoard might reasonably be expected; but bracelets have never been found in association with swords in Scotland. Moreover, it is very difficult to determine to which of her two types several of the bronze bracelets from Eastern Scotland belong. The bracelets from Covesea are probably debased Irish forms, a suggestion which is strengthened by the fact that they were found in association with false "ring money."

² *Proc. Soc. Ant. Scot.*, vol. lxxvii, p. 116.

³ Or, as Professor Childe has suggested, their introduction may have been the work of British craftsmen, who had travelled on the Continent and were accustomed to the models in use there.

who travelled about the country, practising their craft in the various villages through which they passed and disposing of their products to the inhabitants. That internal traffic of this nature was carried on is evidenced by the numerous traders' hoards which have come down to us.¹ These hoards may have been deposited in time of danger with a view to retrieving them when the danger was past. On the other hand, they may simply represent a method of working on the part of the travelling smith; it may be that he was in the habit of accepting old and disused tools and weapons in part payment for the new ones, and was frequently compelled to lighten his load by dumping several of the objects at some marked spot on his route where he might easily collect them at a more convenient time.

There was also considerable traffic by sea around the coasts of the British Isles. Indeed in the Late Bronze Age there was apparently a strong stimulation of maritime traffic, which in the west must have been in the nature of a revival. During the centuries of the Bronze Age which preceded the introduction of the new metal types to Scotland, Atlantic traffic appears to have fallen off very considerably. The absence of cinerary urns, so numerous on the mainland of Scotland, from our western and northern islands may be taken as a result of this partial interruption of Atlantic traffic. The Late Bronze Age witnessed a revival of maritime activity on the west which re-established communication and brought about a continuity of culture between the mainland of Scotland and the islands to the west and north. The same cultural unity also embraced Northern Ireland, and it is from that area that many of the elements in the culture of the Scottish Late Bronze Age are immediately derived. It was mainly through the co-operation of these two forces, namely the perambulating activities of the merchant smith and the stimulation and extension of maritime traffic, that the foreign innovations and improvements became incorporated in the metal industry of our Late Bronze Age and spread to the most remote corners of the country.

SOCKETED AXES.

Though the socketed axe is a Continental type, its exact centre of dispersal has still to be determined. As Harrison² has pointed out, the socketed axe was not evolved from the winged type as Montelius believed, nor from the palstave as Sophus Müller contended. Our socketed axes were probably in the last resort derived from the East

¹ See J. Graham Callander in *Proc. Soc. Ant. Scot.*, vol. lviii, p. 144.

² *Man*, 1926, p. 143.

Mediterranean lands. From Mesopotamia came the earliest socketed tools, in which the socket has been fashioned by folding the sides of the metal round to form a tube. The same method was employed in the manufacture of the socketed hoes from Egypt,¹ where cast sockets of a similar form also occur, and derivatives of these early tools have also been found in South Russia.² It was probably from these early socketed forms that the idea of the socket was borrowed and applied to the European axes.

It was from the Continent that the socketed axe was introduced into Lowland England where, along with other distinctive types, it ushered in the Late Bronze Age. The commencement of this period in Lowland England may be taken as approximately 1000 B.C., but a considerable time must have elapsed before the socketed axe made its appearance in Scotland where the Late Bronze Age is roughly contemporary with the Hallstatt period of the Continent.

Map I. shows the distribution of some 240 socketed axes from Scotland, but there are many more whose localities are unknown and which are therefore useless for distribution purposes.

There is little to distinguish many of the plain socketed forms found in Scotland from common English types; on the east of Scotland in particular the patterns followed by the makers are to a great extent based upon models in use farther south. The weight of distribution on the eastern seaboard and the concentrations around the estuaries of the rivers and up the river valleys as far north as the Dornoch Firth indicate that coastwise traffic probably played the more active part in the spread of influence from England. A notable feature of the distribution of socketed axes is their frequent occurrence in the area between the Forth and the Tweed and particularly in the Tweed Valley itself. This feature would seem to point to a penetration of Scotland by land too, not only by way of the eastern coastal strip but also across the Cheviots: to the merchant-smith eager to ply his trade across the border these hills apparently formed no effective barrier.

Across the Cheviots came the smith responsible for the introduction to Scotland of a type of axe with three vertical ribs running down the face of the socket, a decoration which distinguishes what Fox³ has termed the "Yorkshire Type" (fig. 1, No. 1). Its distribution is interesting. It is found most abundantly on the east of England, with a concentration in Yorkshire; it is very rare in the south and west of England

¹ Flinders Petrie, *Tools and Weapons*, p. 18.

² Tallgren, "La Pontide préscythique," *Eurasia Septentrionalis Antiqua*, ii. p. 187 and fig. 104 (1-4).

³ *Proceedings of the Prehistoric Society of East Anglia*, 1933, p. 158.

and is virtually unknown in Ireland. Fox believes that the type was introduced to Yorkshire direct from the Continent. The three vertical ribs are of common occurrence on axes from Hungary and Styria, and the same decoration is found on axes from various parts of France. It would appear that the movement started from Hungary and spread up the Danube to the Upper Rhine, and from there was dispersed by various routes across France and down the Rhine. It was probably from the latter quarter that the invaders, postulated by Fox, reached the eastern shores of England. The "Yorkshire Type" certainly reached Scotland,

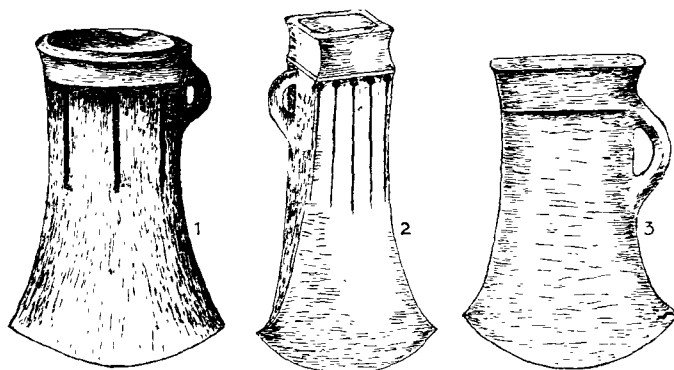
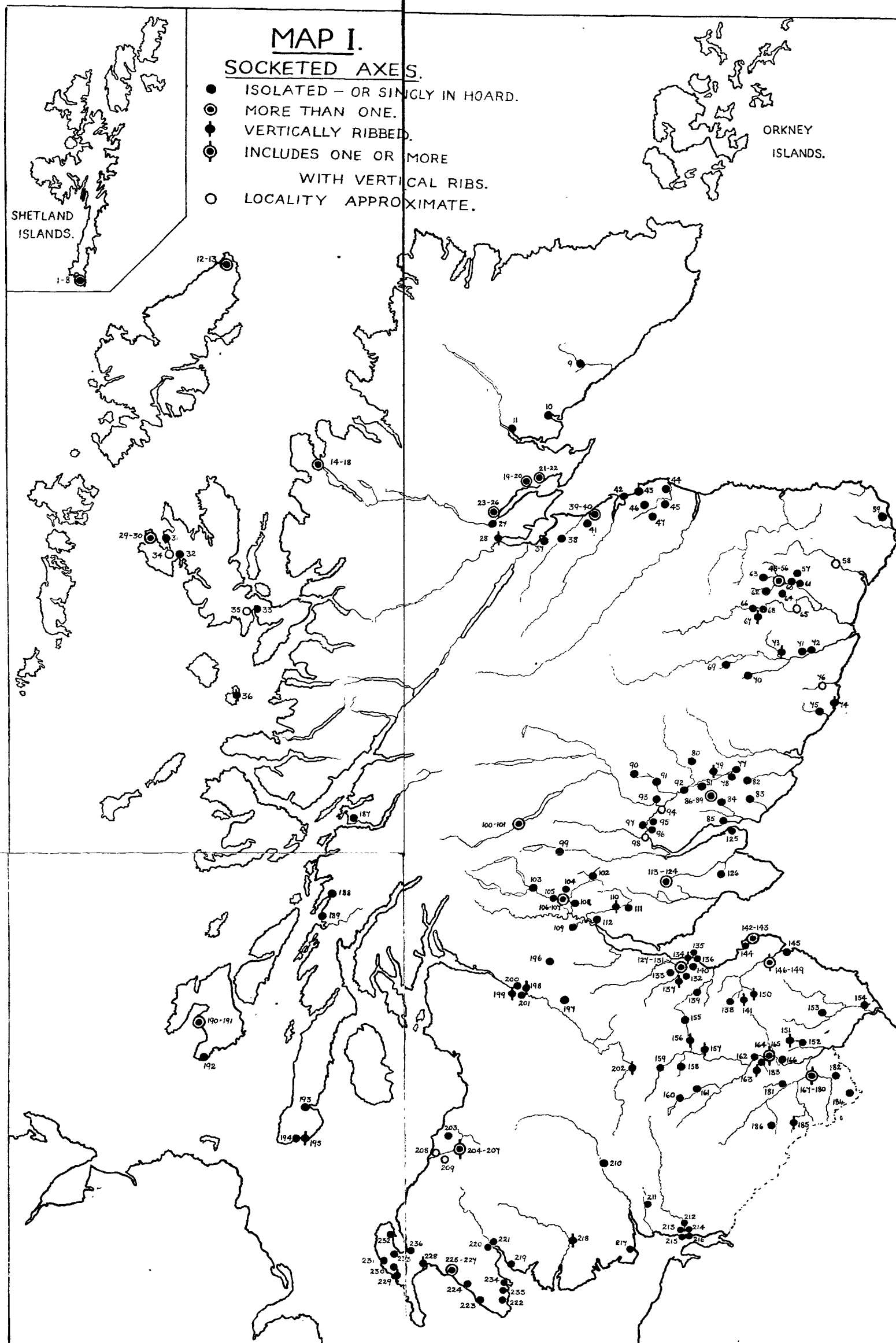


Fig. 1. Socketed Bronze Axes. (1.)

where it is fairly well represented. Finds of this type are most numerous in the Tweed Basin above Kelso. The avenue of approach to Scotland was apparently by way of Carter Bar; thence it spread down the Jed Valley to the Teviot. The hoard from Kalemouth, where the Kale joins the Teviot, has yielded 12 socketed axes, 8 of which are of "Yorkshire Type." The Kalemouth hoard marks an important centre for the diffusion of the Scottish axes of this type, for here quite close to the point of introduction of the new type to Scotland no fewer than seven of those axes have been made from one model. The type apparently spread from the Tweed to the Eddleston Valley, through which it penetrated to the Lothian Plain. Beyond the Forth its distribution thins out, but it is found very sporadically as far north as Aberdeenshire. The three examples of "Yorkshire Type" from the south-west of Scotland may be the result of a deflection from the highway of diffusion by way of the Tyne Gap.

Map I. shows the distribution of all the vertically ribbed socketed axes: amongst them are a few with 4 or 5 ribs which, it is reasonable to suppose, are derivatives of the "Yorkshire Type" (fig. 1, No. 2).



Distribution Map of Socketed Bronze Axes in Scotland.

W. HENDERSON.

PLATE XV.

[To face page 154.

Among the socketed axes from Scotland are many which have obviously been fashioned upon Irish models.¹ These exhibit the common Irish features of a rounded body and a cutting edge curving well backwards. The Irish type is found in its purest form particularly in the south-west of Scotland and throughout the Western Islands. The specimens from Knockglass, Portpatrick and Penninghame, Wigtownshire (fig. 1, No. 3) are thoroughly Irish in form, as are two found together near Husabost House, Skye (fig. 2, Nos. 1 and 2), and one from Roskhill, Dunvegan, Skye (fig. 2, No. 3).

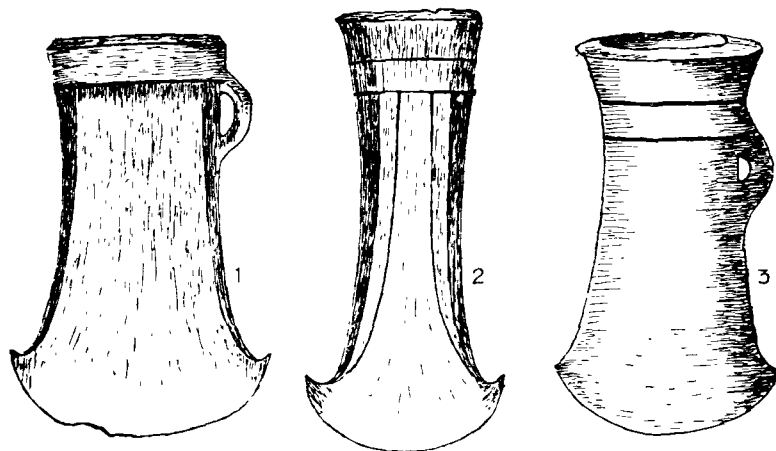


Fig. 2. Socketed Bronze Axes. (1.)

Besides these purely Irish forms, there are several others from the west of Scotland which are clearly inspired from Ireland: notably the faceted forms from the hoards of Adabrock, Lewis (fig. 3, No. 1) and Islay have close parallels in Northern Ireland.² There is Irish inspiration too in the moulds for socketed axes from Jarlshof in common with the other moulds from the same site.³

The Irish forms from the west of Scotland are not necessarily to be regarded as imports, but were more probably introduced by travelling smiths who had acquired their craftsmanship in Ireland. Besides the Irish forms of socketed axe, they were responsible for the introduction

¹ Socketed axes are very numerous in Ireland: the National Collection at Dublin contains 513 specimens, while 121 Irish examples are preserved in the National Museum of Antiquities at Edinburgh.

² Evans, *Ancient Bronze Implements*, p. 141.

³ The mould fragments from Jarlshof included a clay core for the socket of a bronze knife: the clay core exactly fits the socket of an Irish knife in the Bell Collection in the National Museum of Antiquities (*Proc. Soc. Ant. Scot.*, lxxviii, fig. 50).

to Scotland of many other Irish types, including the numerous gold ornaments, socketed knives, cauldrons, buckets, and the lunate type of spear-head, all of which belong to our Late Bronze Age.

The activities of the Irish smiths or their pupils were by no means



Fig. 3. Socketed Bronze Axes. (1.)

confined to the west of Scotland. There is evidence of what was probably a rapid penetration of Irish influence across Central Scotland and diffusion throughout the eastern area. Particularly Irish are, for example, the axes from the Roman Camp at Ardoch, Perthshire (fig. 3, No. 2), Castlehill, Angus (fig. 3, No. 3), and Arthur's Seat, Edinburgh (fig. 3, No. 4). The distribution of other Late Bronze Age types, particularly of the swords and ornaments, show this same feature of inland penetration from west to east. The lines of penetration appear

to have been from the Clyde basin along the lowlands on either side of the Campsie Fells and the Ochils, leading on the one hand to the plain of the Lothians and on the other by Strathmore to Perthshire and Angus.

Other lines of penetration of Irish influence across Scotland are not well attested from the distribution of socketed axes, though maps of other types, *e.g.* the spear-heads of Late Bronze Age type, suggest an alternative route by way of Loch Awe, the valleys of the Lochy and the Dochart to Loch Tay.

One is tempted to derive the Irish types of socketed axe found in the regions of the Moray and Dornoch Firths from the west by the

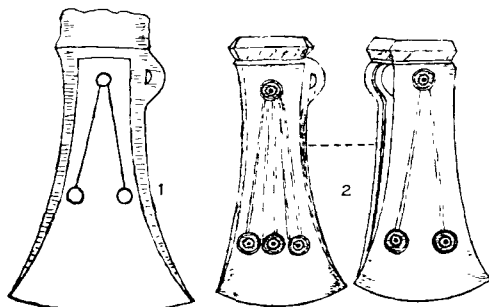


Fig. 4. Socketed Bronze Axes. (1.)

valleys of the Bran and the Oyckell, though they may simply represent an extension of Irish influence from the east-central area of Scotland. Among these may be noted the Irish forms from the hoards of Highfield, Dingwall (fig. 3. No. 5), and Inshoch, Nairn (fig. 3. No. 6), and a peculiarly decorated mould for a faceted form from Rosskeen, Ross-shire (fig. 4, No. 1). The latter has parallels in the south-west from Knockandmaize, Leswalt, Wigtownshire (fig. 4, No. 2), and Holytown, Lanarkshire (fig. 5, No. 1). All three have on the face of the socket annulets connected by oblique lines, a decoration which is paralleled in the north-west of Ireland (fig. 5, No. 2).¹ There are, however, parallels to these from the Thames basin, one from Kingston, Surrey,² having very striking analogies in form and decoration with the Knockandmaize axe.

The socketed axe from Annan (fig. 5, No. 3) with the V decoration on the face of the socket is of some interest. This type is very rare in Scotland, the only parallel coming from Craichie Parish, Dunnichen,

¹ ÓRíordáin, *Proceedings of the Royal Irish Academy*, vol. xlii. Sect. C. p. 160.

² Evans, *Ancient Bronze Implements*, p. 124 and fig. 142.

Angus (fig. 5, No. 4): in the latter specimen the V decoration is combined with annulets and is somewhat more complicated. The V motif is common on socketed axes from Hungary,¹ and Harrison regards it as a reminiscence of the flanges of the Bohemian palstave which met towards the blade. From what immediate source the makers of those two axes derived this feature of decoration it is not possible at present to determine.

Another rare type whose immediate derivation is doubtful is the socketed axe with vertical ribs ending in pellets (fig. 5, No. 5). Such axes are fairly common in France,² and both England and Ireland can supply examples. Scotland has yielded only a few examples and their distribution is not significant.

The socketed axe with herring-bone decoration on the neck of the

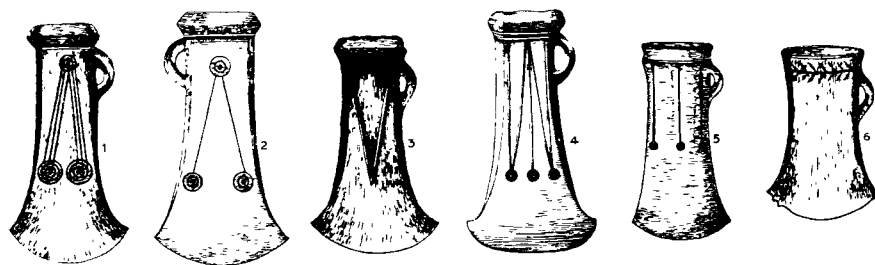


Fig. 5. Socketed Bronze Axes. (1.)

socket from The Mound, Sutherland (fig. 5, No. 6), is unique. This motif is common on flat axes of Early Bronze Age, but this is the only example of its occurrence on the socketed form. If, as Professor Childe holds,³ the Middle Bronze Age was never fully established in the north, it may be that here the socketed axe directly superseded the flat axe and the ornament was transferred from the one type to the other.

Finally it may be noted that socketed axes with vestigial wings, in common with the true winged axes from the late hoards of Lowland England,⁴ are entirely absent from Scotland.

LEAF-SHAPED SWORDS.

The leaf-shaped sword made its appearance in Britain after passing through various stages of development on the Continent. Peake⁵

¹ Hampel, *La Bronzkor*, vol. iii, cexvii, No. 9; Childe, *The Danube in Prehistory*, pl. iii, c 4; Childe, *The Bronze Age*, p. 66.

² Evans, *Ancient Bronze Implements*, p. 122.

³ Childe, *Prehistory of Scotland*, p. 149.

⁴ Estyn Evans, *Antiquity*, vol. iv, p. 158.

⁵ *The Bronze Age and the Celtic World*, p. 92.

divides the European bronze swords into seven successive types, his classification being based upon the outline of the shoulders of the blade. In his earliest types this outline is convex, later the shoulders are straight, and finally in the Hallstatt sword the outline is concave. He regards his earliest type A as having evolved in the Plain of Hungary.

The earliest swords found in Britain appear to belong to Peake's convex class (type D), but it is not until the straight-shouldered type E is

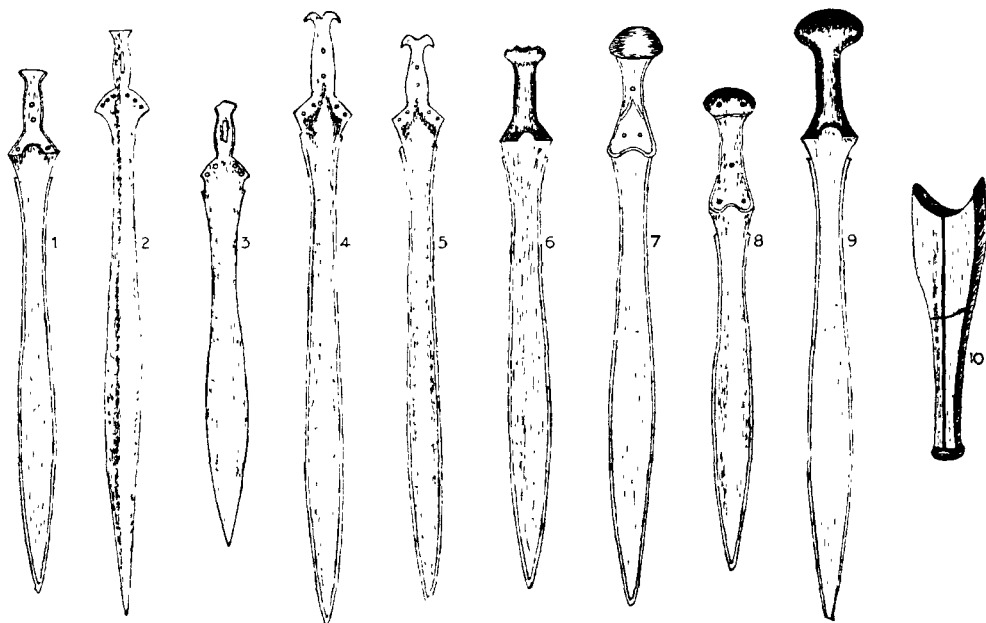


Fig. 6. Bronze Swords and Sword Chape of Bronze. Nos. 1, 2, 3, 5, and 6 ($\frac{1}{16}$); Nos. 4, 7, 8, and 9 ($\frac{1}{2}$); No. 10 ($\frac{1}{4}$).

reached that we see the sword with which we are familiar in Scotland (fig. 6, No. 1). It is to this type, termed by Brewis¹ the V type, that practically all the swords from Scotland belong. The hilt and wings are furnished with rivet holes, or in a few cases with slots for the attachment of bone or horn plates.

One sword with convex shoulders (Brewis's U type) comes from Mugdrum Island in the River Tay (fig. 6, No. 2), and is the longest sword found in Scotland ($30\frac{1}{2}$ inches). The hilt is furnished with a slot and six small rivet holes appear in the wings; the rounded shoulders and absence of ricasso may be regarded as early features of this sword. This type of sword is not found in the north of England, but parallels

¹ "The Bronze Sword in Great Britain," *Archæologia*, vol. lxxiii, p. 253.

come from farther south, one in the Brentford Museum¹ being very similar and another coming from Barrow in Suffolk.² The distribution of the V type, on the other hand, covers practically the entire habitable area of the British Isles. Both types were probably well established in our islands before the arrival of the Carp's Tongue Sword from Central Europe. The appearance of the latter in Lowland England associated with winged axes is regarded by Estyn Evans³ as a result of an actual folk movement from the Continent. The effect of such a movement does not appear to have been very extensively felt in Britain: at any rate Scotland remained unaffected, as the complete absence of swords of Carp's Tongue type and also of true winged axes demonstrates.

There is reason to believe that the examples with slots instead of rivet holes are among the earliest swords found in Scotland. At any rate, as we have seen, this feature is found in the U type sword from Mugdrum Island; the sword from Polder Moss, Perthshire (fig. 6, No. 3), which might also be regarded as of U type, is again furnished with a slot in the hilt plate. Again, the same feature occurs in the sword from Corsbie Moss, Berwickshire,⁴ found in association with a spear-head with loops on the socket; such a spear-head is normally associated with Middle Bronze Age types,⁵ and this is its only occurrence in a Late Bronze Age context in Scotland. Other swords with slots in the hilt come from Arthur's Seat, Edinburgh, and Latheron, Caithness. All come from the east of Scotland and possibly owe something to an early influence arriving by sea from England, where the slotted hilted swords have a lowland distribution concentrated mainly in the Thames basin and East Anglia.

No sword of true Hallstatt type has been found in Scotland, but there are three examples which in certain peculiarities suggest Hallstatt affinity. These come from Leuchland, Brechin (fig. 6, No. 4), the River Tay near Elcho (fig. 6, No. 5), and the River Tay near Perth. In each case the tang ends in a double hook, and the blade has a central thickening which terminates in the shoulder in a pronounced V shape. All three bear a very close resemblance to an English sword from the River Tyne which, Parker Brewis⁶ states, is identical with a sword from a cemetery at Melkendorf in Bavaria found along with a Hallstatt winged chape.

¹ *Archaeologia*, vol. lxxiii., pl. xxxix. fig. 19.

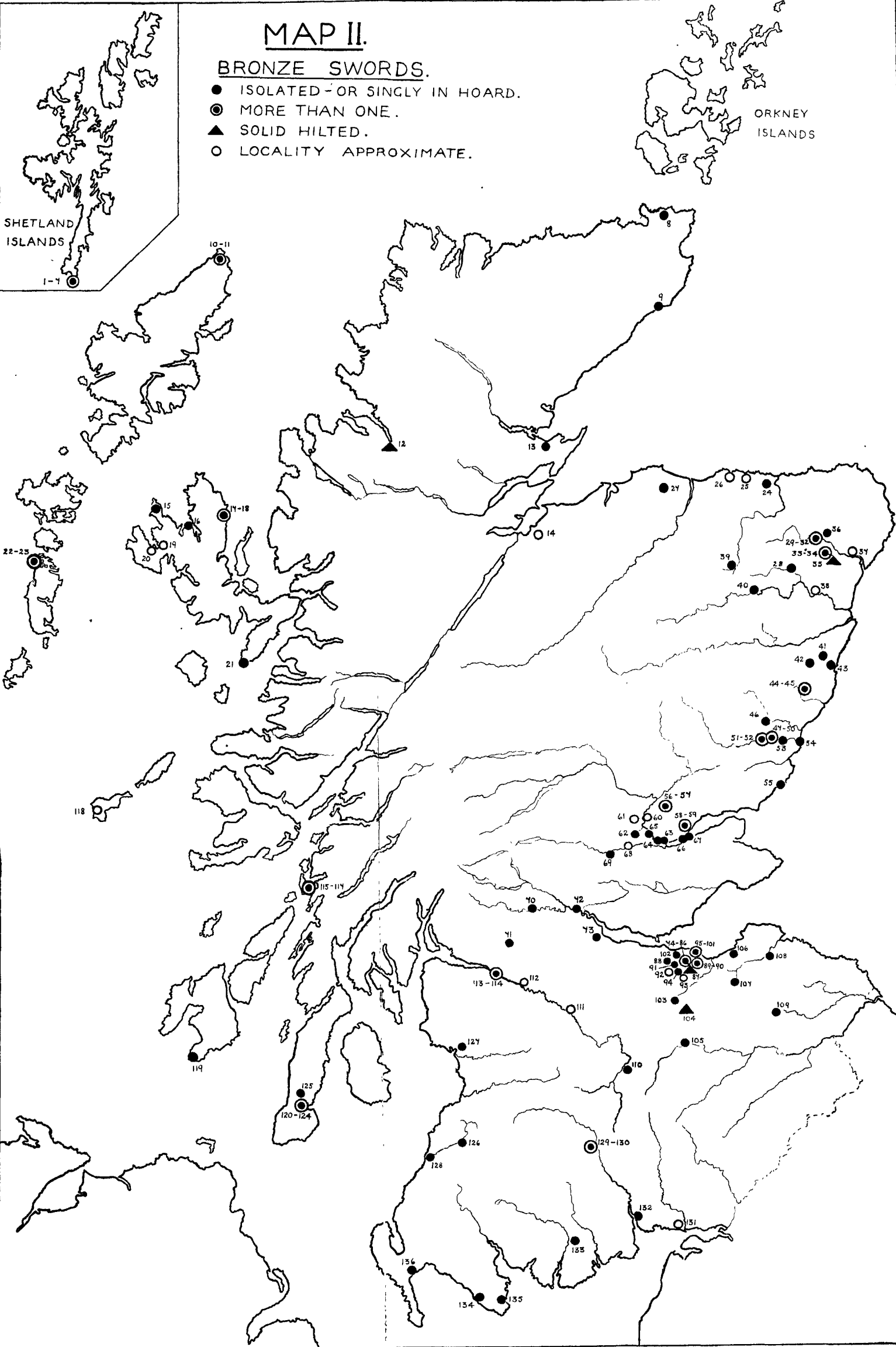
² Evans, *Ancient Bronze Implements*, p. 279.

³ "The Sword Bearers," *Antiquity*, vol. iv, p. 164.

⁴ *Proc. Soc. Ant. Scot.*, vol. lv, 17.

⁵ Estyn Evans, "The Bronze Spear-head in Great Britain," *Archaeologia*, vol. lxxxiii, p. 187.

⁶ *Archaeologia*, vol. lxxiii, p. 253, figs. 24 and 25.



Distribution Map of Leaf-shaped Swords in Scotland.

It seems highly probable that the above-mentioned Scottish swords represent an infiltration of Hallstatt influence, definite evidence of which is so lacking in Scotland, apart from a razor from Traprain Law.

Four swords of the bronze hilted variety have been found in Scotland; these come from Inverbroom, Ross-shire (fig. 6, No. 6), Tarves, Aberdeenshire (fig. 6, No. 7), Grosvenor Crescent, Edinburgh (fig. 6, No. 8), and Leadburn, Peeblesshire (fig. 6, No. 9). The last-mentioned has its hilt and pommel cast over a clay core which can still be seen in position. In the Inverbroom specimen the pommel is broken, revealing the end of the usual flat hilt plate inside; this shows that, in this specimen at least, the hilt and pommel have been cast on to the hilt plate of the normal V type. A few bronze hilted swords have been found in England, one from the River Cherwell resembling very closely the Leadburn sword. The solid-hilted swords of Central Europe differ greatly in the design of the hilt from our Scottish examples, which find their closest foreign parallel in a sword from Scandinavia.¹

The chapes ² associated with the Scottish swords are all of the narrow tongue-like variety normally associated with swords of V type (fig. 6, No. 10).

Map II. shows the distribution of 136 swords from Scotland. As might be expected, there is a general agreement in their distribution with that of socketed axes. The relative absence of swords, however, from the Tweed Valley suggests that there was little or no traffic in these weapons by land from England. Indeed, the coastal and offshore nature of the sword distribution gives the impression that the users were in the main a seafaring rather than a pastoral people. This impression is strengthened when we consider the numerous swords which come from the west coast and the coastal strips of the Western Islands, the Irish derivation of which seems the most reasonable explanation.³ An increase of maritime activity in the west was apparently responsible for the diffusion of this and other associated types throughout the Western Islands and as far north as Shetland, where the sword moulds from Jarlshof give evidence of manufacture by a smith accustomed to Irish models.

No doubt the manufacture of V-type swords in Eastern Scotland was to some extent affected by influences coming coastwise from

¹ Montelius, *Minnen från vår Forntid*, p. 78, fig. 1201.

² Five chapes are recorded from Scotland; these come from Tarves, Aberdeenshire; Cauldhame, Brechin (fig. 6, No. 10); Gogar, Midlothian; River Clyde, near Renfrew; and Campbeltown, Argyll.

³ Leaf-shaped swords are very numerous in Ireland. At least 120 specimens are preserved in the National Museum at Dublin, while the National Museum of Antiquities at Edinburgh contains 37 specimens, including fragments.

England, but a penetration of Irish influence across Central Scotland from the Clyde to the Forth cannot be overlooked and is in fact attested by the distribution in that region.

The above paper represents a section of a more comprehensive study of the entire metal industry of the Scottish Late Bronze Age. In the absence of evidence from the other metal types, certain conclusions have meanwhile to be reserved, but the complete evidence when recorded will serve to strengthen the main suggestion offered here, namely, that Irish influence was the dominating factor in the cultural development of the Scottish Late Bronze Age.

In conclusion, I have to acknowledge my indebtedness to Professor Gordon Childe, who suggested this subject of research, for his help and encouragement throughout; to Mr (now Professor) Seán ÓRíordáin of the National Museum, Dublin, for his kind assistance in connection with the Irish material; to Mr J. D. Cowen, through whose help I was able to make certain additions to my list of swords; to the late Dr Graham Callander, for his advice in connection with the publication of this paper and whose analysis of the Scottish Bronze Age Hoards¹ greatly helped me in my researches; and to Mr A. J. H. Edwards, Director of the National Museum of Antiquities, for his valuable guidance in connection with maps and illustrations.

I must also record my thanks for items of information kindly supplied to me by the curators of various museums throughout the country.

¹ *Proc. Soc. Ant. Scot.*, vol. lvii, p. 144.

NOTES TO THE TABLES.

H indicates that the object has been found in a hoard.

For lists and details of the Scottish Late Bronze Age hoards, see Callander, *Proc. Soc. Ant. Scot.*, lvii. p. 144.

ABBREVIATIONS.

1. *Anderson II.* = *Scotland in Pagan Times—Bronze and Stone Ages.*
2. A.B.I. = Evans, *Ancient Bronze Implements.*
3. *Anc. Arm.* = Grose, *Treatise on Ancient Armour.*
4. *Arch. Scot.* = *Archæologia Scotica.*
5. B.A. Cat. = *British Association Catalogue of Bronze Implements.*
6. *It. Sept.* = Gordon, *Itinerarium Septentrionale.*
7. N.M.A. = National Museum of Antiquities of Scotland.
8. N.M.A. Cat. = *Catalogue of the National Museum of Antiquities of Scotland, 1892.*
9. P.R.I.A. = *Proceedings of the Royal Irish Academy.*
10. P.S.A.S. = *Proceedings of the Society of Antiquaries of Scotland.*
11. *Wilson, I.* = Daniel Wilson, *Prehistoric Annals of Scotland*, Vol. I.

[TABLES.]

LIST OF SOCKETED AXES FOUND IN SCOTLAND.

Shetland.

No.	Locality.	Preserved.	References.	Remarks.
1-8	Jarlshof.	N.M.A.	P.S.A.S., lxvii. 112.	Moulds only—among the numerous fragments of moulds from this site Dr Curle has distinguished pieces for 8 separate axes.
<i>Sutherland.</i>				
9	Kildonan Strath.	Hunterian Mus., Glasgow.		
10	Cumabusmore, The Mound.		P.S.A.S., I. 306.	
11	Bonar Bridge.	N.M.A., DE. 84.	P.S.A.S., lv. 275.	Herring-bone decoration on neck of socket.
<i>Ross and Cromarty.</i>				
12-13	Adabrock, Noss, Lewis.	N.M.A., DQ. 211, 212.	P.S.A.S., xlv. 27; lvii. 144.	H.
14-18	Poolwee.	One in N.M.A.	P.S.A.S., xiv. 45; lvii. 144.	H.
19	Roskeen.	N.M.A., CM. 11, 12.	<i>Wilson</i> , I. 345.	
20	Do.	N.M.A., CM. 15, 16.	<i>Ibid.</i>	Mould only. Mould with decoration consisting of rings and connecting ridges.
21-22	Wester Ord, Invergordon.	N.M.A., DQ. 266, 267.	P.S.A.S., liv. 129; lix. 113; lvii. 144.	H.
23-26	Highfield, Dingwall.	N.M.A., DQ. 83, 84, 85, 86.	<i>Sinclair's Account of S.A. of Scot.</i> , Part I. 54.	H.
27	Conon Mains.	N.M.A., DE. 62.	<i>Anderson</i> , II. 153.	
28	Tarradale.	N.M.A., DE. 61.	P.S.A.S., xxxii. 7.	Decorated with 5 ridges depending from pellets above.

Inverness-shire.

29-30	Husabost House, Skye.	N.M.A., DQ. 300, 301.	P.S.A.S., lxvii. 312.	H.
31	Kilhuir, Skye.	N.M.A., DE. 41.	P.S.A.S., i. 180.	Part of wooden handle attached.
32	Roskhill, Dunvegan, Skye.	N.M.A., DE. 99.	P.S.A.S., lxviii. 17.	
33	Parish of Strath, Skye.	N.M.A., DE. 2.	P.S.A.S., xix. 78.	
34	Skye.	N.M.A., DE. 39.	N.M.A. <i>Cat.</i> , p. 134.	Vertically ribbed.
35	Do.	N.M.A., DE. 40.	<i>Ibid.</i>	
36	Island of Elgg.	N.M.A., BN. 50.	..	
37	Culloden.	..	B.A. <i>Cat.</i>	
38	Border of Cantray and Clava.	Marischal College.	B.A. <i>Cat.</i>	

Nairnshire.

39-40	Inshoch.	N.M.A., DQ. 76, 77.	Anderson, II. 153.	H.
41	Auldearn.	..	B.A. <i>Cat.</i>	

Morayshire.

42	Cullerne, Findhorn.	N.M.A., DQ. 234.	P.S.A.S., lvi. 124; lvii. 123.	H.
43	Burgie.	Falconer Mus., Forres.	P.S.A.S., i. 207.	
44	Spyne Castle, Elgin.	Elgin Museum.	B.A. <i>Cat.</i>	
45	Elgin.	..	B.A. <i>Cat.</i>	
46	Alves, Elgin.	..	P.S.A.S., ix. 435.	H.
47	Auchtertyre	..		

Aberdeenshire.

48-56	Rehll, Preenay.	One in N.M.A., DQ. 72.	Anderson, II. 160. P.S.A.S., ii. 138; lvii. 144.	H.
57	Grassieslack, Daviot.	..	P.S.A.S., xlvii. 450.	H.
58	Unknown.	Marischal College.	Additions to <i>Marischal Cat.</i> , No. 247.	
59	Manse of St Fergus, Buchan.	Arbuthnot Museum, Peterhead.	P.S.A.S., lxx. 210.	
60	Pitcaple.	Pitcaple Castle.	P.S.A.S., xxvii. 12.	
61	Do.	N.M.A., DE. 59.	P.S.A.S., ix. 17.	
62	Benachie.	N.M.A., DE. 92.		

Aberdeenshire - contd.

No.	Locality.	Preserved.	References.	Remarks.
63	Dumnydeer.	Marischal College.	<i>Marischal Coll. Cat.</i> , 246.	
64	Parish of Premnay.	N.M.A.	P.S.A.S., lxxii, 69.	
65	Unknown.	Marischal College.	Additions to <i>Marischal Cat.</i> , 248.	
66	Alford.	N.M.A., DE. 93.	P.S.A.S., xxvii, 12.	
67	Do.	N.M.A., DE. 58.	P.S.A.S., lx, 98.	
68	Do.	N.M.A., DE. 109.	P.S.A.S., lxxii, 69.	
69	Gleantannar.	N.M.A., DE. 54.	P.S.A.S., xxiv, 14.	
70	Forest of Barse.	N.M.A., DE. 13.	P.S.A.S., ii, 153.	3 vertical ribs.
<i>Kincardineshire.</i>				
71-72	Loch Drum.	N.M.A., DE. 37, 38.	N.M.A. <i>Cat.</i> , p. 134.	3 vertical ribs.
73	Racemour.	N.M.A., DE. 85.	P.S.A.S., lvi, 17.	3 vertical ribs.
74	Hall Hill.	N.M.A., DE. 6.	P.S.A.S., ii, 63.	
75	Bagindalen	Montrose Museum.	P.S.A.S., xxii, 403.	
76	Unknown.	N.M.A., DE. 15.	N.M.A. <i>Cat.</i> , p. 133.	
<i>Angus.</i>				
77	Forfar.	N.M.A., DQ. 129.	P.S.A.S., xxiii, 15.	H.
78	Balnashanner.	N.M.A., DQ. 131.	P.S.A.S., xxvi, 182.	H.
79	Arlic, near Kirriemuir.	N.M.A., DE. 108.	P.S.A.S., lxxii, 69.	3 vertical ribs.
80	Kingoldrum.	N.M.A., DE. 12.	P.S.A.S., xiv, 171.	Chisel-shaped.
81	Hutton, Newtyle.	N.M.A., DE. 75.	P.S.A.S., xlv, 331.	
82	Craiche Parish, Dunnichen.	British Museum, 4 18, 3.	..	V decoration combined with annulets.
83	Monkic.	..	B.A. <i>Cat.</i>	
84	Tealing.	Albert Inst., Dundee.		
85	Blackness, Dundee.	N.M.A., DE. 71.	P.S.A.S., xlv, 331.	
86-89	Castlehill.	N.M.A., DQ. 79, 80, 81, 82.	P.S.A.S., ii, 65.	H.

<i>Perthshire.</i>			
90	Balnabrock, Kirkmichael.	N.M.A., DE. 72.	P.S.A.S., sliv. 331.
91	Craighall, Blairgowrie.	N.M.A., DE. 44.	N.M.A. <i>Cat.</i> , p. 134.
92	Cronan, Strathmore.	N.M.A., L. 1926. 12.	B.A. <i>Cat.</i>
93	River Tay at Dedyne.	..	P.S.A.S., lxx. 234.
94	Unknown.	N.M.A., DE. 88.	P.S.A.S., x. 401.
95	Manse of St Martin's.	N.M.A., DE. 34.	P.S.A.S., xlviii. 371.
96	South Friarton.	N.M.A., DE. 75.	B.A. <i>Cat.</i>
97	St Martin's, Thistle Bridge.	..	P.S.A.S., sliv. 192.
98	Luncarty.	N.M.A., DE. 89.	P.S.A.S., xxiii. 150.
99	Unknown.	N.M.A., DE. 52.	P.S.A.S., xvi. 27; lxx. 129.
100-101	Monmore, Killin.	N.M.A., DQ. 51. 52.	P.S.A.S., xxxii. 461.
102	Roman Camp at Ardoch.	N.M.A., FQ. 294.	P.S.A.S., lxxviii. 191.
103	River Tay at Caddler.	N.M.A., DE. 101.	<i>Cat. of South Institute,</i> AK. 8.
104	Do.	Hunterian.	<i>Ibid.</i> , AK. 1. 2.
105	Do.	Smith Inst., Stirling.	<i>Marischal College Cat.</i> , p. 17, No. 247.
106-107	Lundie Farm, near Dunne.	Do.	
108	Dumblane.	Marischal College.	
109	Bannockburn.	N.M.A., DE. 86.	<i>Stirlingshire.</i> P.S.A.S., lvi. 17.
110	Tulliecultry.	..	<i>Clackmannanshire.</i> P.S.A.S., iv. 382.
111	Devonshaw.	Banff Museum.	P.S.A.S., xxv. 369.
112	Near Alloa.	Alloa Mus. of Soc. of Natural Hist. and Archaeology.	

Vertically ribbed.

Pifeshire.

No.	Locality.	Preserved.	References.	Remarks.
113-124	Gosperrie, Craighead, Newport, Struthers House.	One in N.M.A., DE. 33. N.M.A., DE. 98. N.M.A., DE. 20.	<i>Anderson</i> , II. 147. P.S.A.S., lxx. 257. N.M.A. <i>Cat.</i> , p. 133.	H.

Midlothian.

127-131	Bell's Mill, Edinburgh.	Three in N.M.A., DE. 17, 18, 19.	<i>Anderson</i> , II. 160. P.S.A.S., vi. 275. P.S.A.S., xiii. 320; lxi. 45.	DE. 18 loopless. H.
132	Grosvenor Crescent, Edinburgh.	..	..	H.
133	Near Edinburgh.	N.M.A., DE. 7.	..	Socket smashed.
134	Leith.	N.M.A., DE. 9.	P.S.A.S., xii. 209.	Vertically ribbed.
135	Leith.	N.M.A., DE. 36.	P.S.A.S., vi. 313.	Socket broken.
136	Leith.	N.M.A., DE. 35.	<i>Ibid.</i>	Imperfect cutting edge.
137	Falcon Av., Morning- side, Edinburgh.	Collection of J. M. Corrie.	..	Vertically ribbed.
138	Tynehead.	N.M.A., DE. 68.	P.S.A.S., xiii. 204.	
139	Graham's Mount, Penceuk.	N.M.A., DE. 10.	..	
140	Arthur's Seat, Edinburgh.	N.M.A., DE. 16.	P.S.A.S., v. 126. <i>Wilson</i> , I. 351.	H.
141	Fala.	Peebles Museum.	P.S.A.S., xxi. 337.	Vertically ribbed.

East Lothian.

142	North Berwick Law.	N.M.A., DE. 91.	P.S.A.S., ix. 17.	
143	Do. do.	N.M.A., DE. 46.	P.S.A.S., xxi. 33.	
144	Near Gullane.	..	P.S.A.S., lxi. 229.	H.
145	Bowerhouses, Dunbar.	N.M.A., DQ. 69.	<i>Arch. Scot.</i> , iii. 44. P.S.A.S., lvi. 146.	
146-149	Trapram Law.	N.M.A., H.A. 6.	P.S.A.S., lvi. 210; lvi. 193.	One vertically ribbed.
150	Stobsieid, Humbie.	N.M.A., DE. 82.	P.S.A.S., iv. 17; xvi. 476.	Vertically ribbed.

Berwickshire.

151	Corsbie Tower, Leggerwood.	N.M.A., DE. 81.	P.S.A.S., lv. 17.	3 vertical ribs, the middle one with ring termination. Fragment only.
152	Greenknowe, Gordon.	N.M.A., DE. 83.	<i>Ibid.</i>	
153	Near Duns.	N.M.A., DE. 83.	P.S.A.S., lxi. 167.	
154	Greenlaw.	Smith Inst., Stirling.	<i>Cat. of Smith Institute,</i> AK. 7.	

Peeblesshire.

155	Lamancha.	N.M.A., DE. 67.	P.S.A.S., xliii. 9.	Imperfect socket.
156	Daniel Moss, Eddleston.	N.M.A., DE. 1.	N.M.A. <i>Cat.</i> , p. 132.	Vertically ribbed.
157	Unknown.	N.M.A., DE. 4.	<i>Ibid.</i> , p. 133.	Vertically ribbed.
158	Horschope Craig.	N.M.A., DE. 60.	P.S.A.S., xxxi. 78.	
159	Alkbrae.	N.M.A., DE. 25.	N.M.A. <i>Cat.</i> , p. 134.	

Selkirkshire.

160	Douglas Burn.	N.M.A., DE. 69.	P.S.A.S., xlv. 10.	Loop broken off.
161	Dryhope Burn, Yarrow.	N.M.A., DE. 70.	<i>Ibid.</i>	Fragment only.

Roxburghshire.

162	Near Melrose.	N.M.A., DE. 65.	P.S.A.S., xxxvi. 67.	Vertically ribbed.
163	Cauldshiels Loch.	N.M.A., DE. 76.	P.S.A.S., li. 198.	H. In a burn on N.W. side—both vertically ribbed.
164-165	Eildon Hills.	N.M.A., DQ. 273, 274.	P.S.A.S., lx. 14.	
166	Dryburgh.	Jedburgh Museum.	P.S.A.S., xxii. 381.	H. Nos. 167-172 are each decorated with 3 vertical ridges on face of socket.
167-178	Kalemouth.	N.M.A., DQ. 286-297.	P.S.A.S., lxxv. 423.	Cast only—original with Mrs Cochran, Kalemouth House, 3 vertical ribs.
179	Do.	N.M.A., DQ. 298.	<i>Ibid.</i>	Cast only—original in "Queen Mary's House," Jedburgh, 3 vertical ribs.
180	Do.	N.M.A., DQ. 299.	<i>Ibid.</i>	
181	Ladyrigg, Ancrum.	N.M.A., DE. 74.		
182	Caverton.	N.M.A., L. 1933, 2112.	P.S.A.S., lxi. 439.	Mouth of socket broken.
183	Abbotsford.	N.M.A., DE. 102.		Vertically ribbed.
184	Sourhope Farm.	N.M.A., L. 1933, 2113.	P.S.A.S., xxii. 381.	
185	Southdean.	Jedburgh Museum.		
186	Langraw.	N.M.A., DE. 21.	N.M.A. <i>Cat.</i> , p. 133.	

Argyll.

No.	Locality.	Preserved.	References.	Remarks.
187	Achmarree Moss, Loch Eive.	N.M.A., DE. 11.	P.S.A.S., x, 83, 458.	
188	The Port, Craignish.	N.M.A., DE. 94.		H.
189	Poltalloch.	N.M.A., LP. 17.	P.S.A.S., Ixi. 107.	
190-191	Islay.	N.M.A., DQ. 17, 48.	P.S.A.S., xvi. 409.	H.
192	Loch Arichand, On Islay.	N.M.A., DE. 97.	P.S.A.S., Ixi. 18.	
193	Crosshill Farm, Cantyre.	Campbeltown Museum.		
194	Southend, Cantyre.	Campbeltown Museum.		
195	Do.	N.M.A., DE. 8.	P.S.A.S., iv. 396.	Vertically ribbed.
<i>Dumbartonshire.</i>				
196	Croy, Cumbernauld.	N.M.A., DE. 57.	P.S.A.S., xxi. 8.	Vertically ribbed.
<i>Laurelshire.</i>				
197	Holytown.	A. H. Bishop, Thornton Hall.	P.R.L.A., vol. xlii.	Decorated—annulets connected by oblique lines.
198	Neighbourhood of Glasgow.	Kelvingrove Museum.	Secd. c. p. 160.	Vertically ribbed.
199	Do.	Do.	..	
200	Do.	Do.	..	
201	York Street Ferry, Glasgow.	Do.		4 vertical ribs ending in small pellets.
202	Hangingshaw, Coulter.	N.M.A., DE. 23.	P.S.A.S., xvi. 146.	Vertically ribbed.
<i>Ayrshire.</i>				
203	Maybole.		P.S.A.S., xiv. 98.	
204-207	Kilkeran.	N.M.A., DQ. 92, 93, 94, 98A.	P.S.A.S., xix. 315.	H. DQ. 93 vertically ribbed.
208	Unknown.	Dumfries Museum.	P.S.A.S., xxi. 376.	
209	Do.	Smith Inst., Stirling.	<i>Cat. of South Institute</i> , AK. 4.	

Dumfriesshire.

210	Auchencairn Hill, Closeburn.	Dumfries Museum.	P.S.A.S., xxi. 376.
211	Torthorwald Castle, Annan.	Do. N.M.A., DE. 77, 78, 79, 80.	P.S.A.S., iv. 11.
216	Annan.	Dumfries Mus., 262 c.	.. V decoration on face of the socket.

Kirkcudbrightshire.

217	Carso Loch.	N.M.A., DE. 5.	N.M.A. <i>Gal.</i> , p. 133.
218	Kilnorie, Crossmichael.	N.M.A., DE. 3.	<i>Ibid.</i> , p. 132.
219	Muirfad, Kirknabreck.	N.M.A., DE. 53.	P.S.A.S., xxiii. 150.

Vertically ribbed.

Wigtownshire.

220-221	Pemninghame.	N.M.A., DE. 48, 49.	P.S.A.S., xxiii. 221.	Very small ornamental form with broad splay.
222	Whithorn.	N.M.A., DE. 47.	P.S.A.S., xxiii. 150.	
223	Stelloch, Glasserton.	..	P.S.A.S., xxiii. 221.	
224	Derry, Mochrum.	N.M.A., DE. 50.	P.S.A.S., xxiii. 150.	H.
225-227	Gillespie, Old Luce.	N.M.A., DQ. 228, 229, 230.	P.S.A.S., xlv. 418.	
228	Genoch, Inch.	N.M.A., DE. 63.	P.S.A.S., xxxv. 12.	3 vertical ribs, 3 vertical ribs.
229	Lugganmore, Portpatrick.	N.M.A., DE. 64.	<i>Ibid.</i>	
230	Knockglass, near Portpatrick.	..	P.S.A.S., xlv. 134.	Decorated annulets connected by oblique lines.
231	Portpatrick, Leswalt.	Property of Earl of Stair.	<i>Ibid.</i>	
232	Kirkland, Leswalt.	N.M.A., DE. 22.	P.S.A.S., xvi. 11.	
233	Between Stranraer and Portpatrick.	..	<i>Age and Wigtown Col- lection</i> , ii. p. 10.	
234	Kevans, Carliston.	..	P.S.A.S., lxxv. 297.	
235	Palnallet, Carliston.	..	<i>Ibid.</i>	
236	Invernessan, Inch.	Mechanics' Institute, Newton Stewart.	P.S.A.S., xiv. 135.	

Additional Not included in Distribution Map.

No.	Locality.	Preserved.	References.	Remarks.
237-241	S.E. Scotland.	N.M.A., DE. 103, 104, 105, 106, 107.	P.S.A.S., lxxv. 440.	DE. 104 has 3 flat buttons on neck. DE. 107— 3 vertical ribs on face.
LIST OF LEAF-SHAPED SWORDS FOUND IN SCOTLAND.				
<i>Shetland.</i>				
1-7	Jarlshof.	N.M.A.	P.S.A.S., lxxvii. 112.	Represented by fragments of clay moulds.
<i>Gaithness.</i>				
8	Mey	N.M.A., DL. 50.	P.S.A.S., xlv. 15.	
9	Forse, Latheron.	N.M.A., DL. 2.	P.S.A.S., ii. 33.	
<i>Ross and Cromarty.</i>				
10	Ard, South Dell, Barvas, Lewis.	N.M.A., DL. 43.	P.S.A.S., xxxv. 38.	With hilt plates of horn.
11	Do. do.	N.M.A., DL. 44.	P.S.A.S., xxxv. 375.	Fragment.
12	Inverbroom.	N.M.A., DL. 45 (facsimile).	P.S.A.S., xxx. 352.	Bronze hilted.
13	Fendorn, Tam.	N.M.A., DL. 52.	P.S.A.S., lix. 14.	Hilt chiselled off.

<i>Inverness-shire.</i>			
14	Culloden.	Berlin Museum.	..
15	Watnush, Skye.	..	P.S.A.S., xxiii. 258.
16	Lyndale, near Loch Greshornish, Skye.	Belonged to Mr Macdonald of Bahrnald.	P.S.A.S., xiii. 326.
17-18	Ragg, Skye.	N.M.A., DL. 37. 38.	P.S.A.S., xxi. 9, 221.
19	Skye.	N.M.A., DL. 36.	P.S.A.S., xiv. 96.
20	Skye.	Belonged to Colonel M'Leod of Talsker.	<i>Pennant's "Tour,"</i> ii. 334.
21	Point of Sleat, Skye.	..	P.S.A.S., iii. 101; viii. 310; liv. 129.
22-23	Lochdar, South Uist.	One in N.M.A., DL. 3.	P.S.A.S., vi. 252.
			A.B.f., p. 289.
<i>Banffshire.</i>			
24	Near Blairbunnoch.	Banff Museum.	P.S.A.S., xxii. 369.
25-26	Unknown.	Do.	..
<i>Morayshire.</i>			
27	Brakenhill.	N.M.A., DL. 58.	..
<i>Aberdeenshire.</i>			
28	Crassieslack, Daviot.	..	P.S.A.S., xli. 116; xlvii. 452.
29-32	Haddo House, Methlick.	One in Free Church Collection, Aberdeen.	P.S.A.S., xvii. 362.
33-35	Ythoe, Turves.	British Museum.	A.B.f., p. 290.
36	Schivas House, Methlick.	N.M.A., DL. 24.	P.S.A.S., xiii. 328.
37-38	Unknown.	One in N.M.A., DL. 53.	P.S.A.S., lx. 19.
39	Brawland, Auchindoun.	N.M.A., DL. 59.	P.S.A.S., lxxii. 69.
40	Wellhouse Farm, Alford.	..	P.S.A.S., iv. 386.
			Information kindly supplied by Dr M. E. C. Stewart.
			Part of hilt missing.
			H.
			H.
			Imperfect at point.
			Hilt missing.
			H.
			H. One bronze hilted.
			Haughton House sale.

Kincardineshire.

No.	Locality.	Preserved.	References.	Remarks.
41	Netherley.	Marischal College, Aberdeen.	<i>Marischal College Cat.</i> , p. 18, No. 252.	
42	Bahugrubs, between Rae'dykes and Drumoak.	Do.	<i>Ibid.</i> , p. 18, No. 253.	
43	Moss of Cowie, near Stonchaven.	N.M.A., DL. 27.	N.M.A. <i>Cat.</i> , p. 148.	
44-45	Jackshank, Glenbervie.	N.M.A., DL. 18, 19.	P.S.A.S., xiv, 316.	H.
<i>Logies.</i>				
46	Easterton, Stracathro.	N.M.A., DL. 17.	P.S.A.S., xiii, 328.	Greater part of hilt missing.
47-50	Cauldham, Brechin.	Two in N.M.A., DL. 8, 10.	P.S.A.S., i, 181. A.B.L., pp. 290, 465.	H. Along with claupe.
51-52	Leuchland, Brechin.	British Museum.	A.B.L., p. 289.	H.
53	Railway Station, Brechin.	Montrose Museum, No. 71.	P.S.A.S., xiii, 403.	
54	Montrose.	Peebles Museum.	P.S.A.S., xxi, 337.	
55	Near Arbroath.	N.M.A., DL. 51.	P.S.A.S., iv, 24.	

Perthshire.

56-57	Dumsmarie Hill.	Royal Scottish Mus., Edin., L. 118, 92, 93.	P.S.A.S., lvi, 146.	H.
58-59	Druidstone Park, Errol.	A. H. Bishop, Lanark.	<i>Glasgow Exhib. Cat.</i> , 1911, p. 80.	H.
60	Unknown.	Perth.	P.S.A.S., xxvii, 316.	
61	Do.	Marischal College, Aberdeen.	Additions to <i>Marischal Cat. Cat.</i> , No. 253.	
62	Huntingtower.	Dundee.	P.S.A.S., xxvii, 315.	Imperfect at point.
63	River Tay, near Elcho.	N.M.A., DL. 4.	P.S.A.S., xxi, 337.	
64	Do.	Perth.	P.S.A.S., xxvii, 314.	
65	Do.	N.M.A., DL. 5.	P.S.A.S., xxvii, 314.	
66	Do.	near Mug- dum Island.	P.S.A.S., xxvii, 16.	U type.
67	Do.	do.	P.S.A.S., xxviii, 78.	

68	Unknown.	Kelvingrove Museum.	P.S.A.S., xxxii. 314.	
69	Bailelands, Auchterarder.	N.M.A., DL. 23.		
70	Polder Moss.	N.M.A., DL. 40.	P.S.A.S., xxiii. 9.	Shoulders slightly U-shaped.
<i>Stirlingshire.</i>				
71	Ballagan, Strathblane.	N.M.A., DL. 29.	P.S.A.S., xiii. 329.	
72	Cambuskenneth.	Presented to Alloa Archaeological Soc.	A.B.I., p. 273. P.S.A.S., xxiii. 179.	
73	Graham's Dyke, near Carron.	N.M.A., DL. 1.	N.M.A. <i>Cat.</i> , p. 145.	
<i>Middlethian.</i>				
74-87	Grosvenor Crescent, Edinburgh.	Fixe in N.M.A., DQ. 199, 200, 201, 236, 237.	P.S.A.S., xii. 320; lxi. 45.	H. DQ. 201 is of bronze-hilted type.
88	Gogar House, Corstorphine.	N.M.A., DL. 6.	P.S.A.S., xiii. 331.	Associated with tongue-like clasp and gold ornament of triangular section.
89-90	Arthur's Seat, Edinburgh.	N.M.A., DQ. 90, 91.	Wilson I., p. 351. P.S.A.S., v. 126.	H.
91	Probably Edinburgh.	N.M.A., DL. 55.	P.S.A.S., lxiii. 12.	Part of hilt missing.
92	Unknown.	N.M.A., DL. 48.		
93	Do.	N.M.A., DL. 47.		
94	Edinburgh.	N.M.A., DL. 49.	P.S.A.S., xliii. 178.	
95-101	Duddingston Loch, Edinburgh.	N.M.A.	P.S.A.S., lvi. 360. A.B.I., pp. 289, 409. Wilson I., pp. 348, 350.	H. Fragments representing at least 7 separate swords.
102	Craigleith Quarry.	Hunterian Museum.		
103	Auchencorth.	N.M.A., DL. 46.	P.S.A.S., xxxiv. 435.	
<i>Peeblesshire.</i>				
104	Leadburn.		P.S.A.S., xxv. 6.	
105	Near Peebles.	N.M.A., DL. 42.	<i>Anc. Arm.</i> , pl. lxi. 4. A.B.I., p. 289.	Bronze hilted.

East Lothian.

No.	Locality.	Preserved.	References.	Remarks.
106	Gladsmuir, Southfield.	N.M.A., DL. 20.	P.S.A.S., xxiv. 277.	Hilt broken.
107	Near Keith House.	N.M.A., DL. 16.	P.S.A.S., xvii. 70.	Part of hilt missing.
108	Traprain Law.	N.M.A.	P.S.A.S., lvi. 213.	Fragment of mould.
<i>Berwickshire.</i>				
109	Corsbie Moss, Legerwood.	N.M.A., DQ. 52.	P.S.A.S., xiii. 333; lv. 17.	Associated with spear-head with loops on socket.
<i>Lanarkshire.</i>				
110	Cowgill, Lammington.	N.M.A., DL. 22.	P.S.A.S., xxxii. 8.	
111-112	Unknown.	N.M.A., DL. 13, 14.	A.B.I., p. 289.	
<i>Renfrewshire.</i>				
113-114	River Clyde, near Renfrew.	Scot. Nat. War Memor. Museum, Edinburgh.	<i>Glasgow Exhib. Cat.</i> , 1911, 880, 882.	H.
<i>Argyll.</i>				
115	Island of Shuna.	N.M.A., DL. 21.	P.S.A.S., xi. 120; xxiii. 332.	Hilt missing.
116	Do.	St Andrews.	<i>Ibid.</i>	
117	Do.	Kelvingrove.	<i>Ibid.</i>	
118	Tiree.	..	" <i>Coll and Tiree</i> ," p. 92.	
119	Learnan Budhui, Collabus, Oa,Islay.	..	P.S.A.S., xx. 103.	
120-124	Kilconan, Campbeltown.	Inveraray Castle.	P.S.A.S., xix. 328.	H.
125	Craig's Farm, Kilmaho Marsh, Cantyre.	Campbeltown Museum.		

Ayrshire.

126	Kirkcarran.	N.M.A., DQ. 95.	P.S.A.S., xix. 315.	Broken. H.
127	Near Irvine.	..	<i>It. Sept.</i> , pl. li. 2.	
128	Girvan.	St Andrews.	A.B.L., p. 289. <i>Glasgow Exhib. Cat.</i> , No. 28.	

Dumfriesshire.

129-130	Cauldholme, Drumlanrig.	Drumlanrig Castle.	P.S.A.S., lvii. 146.	
131	Unknown.	N.M.A., DL. 30.	P.S.A.S., vi. 112.	Fragment.

Kirkcudbrightshire.

132	Kelton, near Castle Douglas.	N.M.A., DQ. 118.	P.S.A.S., xix. 327.	Fragment—along with a bronze ring.
133	Carlisle Loch.	N.M.A., DL. 26.	P.S.A.S., x. 261, 286.	Imperfect at point.

Wigtownshire.

134	Downes Burn, Glaserton.	N.M.A., DL. 39.	P.S.A.S., xxiii. 223.	Greater part of hilt missing.
135	Whithorn.	Formerly the property of Dr Douglas, Whit- horn.	P.S.A.S., xxiii. 223.	
136	Glenburn Sands, be- tween Clayshant and Lodney Wood.	N.M.A., DL. 56.	P.S.A.S., lxiii. 20.	

MONDAY, 14th March 1938.

THOMAS YULE, W.S., Vice-President, in the Chair.

A Ballot having been taken, the following Candidates were elected Fellows:—

Lieut.-Colonel J. S. BISSET, R.E. (retired), 135 Warrender Park Road.
Edinburgh.

PAUL DANA CLENDENIN, Clifford House, Kensington Court, London.
W. 8.

T. BRUCE MITFORD, B.A., Lecturer in Humanity, The University.
St Andrews.

RAYMOND RUSSELL, Mottisfont Abbey, Romsey, Hampshire.

The Accounts of the Society for the year 1936–37, which had been circulated amongst the Fellows, were unanimously approved.

The following Donations to the Museum were intimated and thanks voted to the donors:—

(1) By ARCHIBALD MACDONALD, “Lag nan Eun,” Bayhead,
Lochmaddy, North Uist.

Beam Scales of Wood, used for weighing wool in North Uist, said to have been in one family for over 150 years.

(2) By THE FORESTRY COMMISSION (SCOTLAND).

Cresset of red sandstone, with a large cavity at each corner and a smaller one in the centre: found at one of the cottages owned by the Commission at Spottiswoode, Lauder, Berwickshire.

It was intimated that there had been acquired through the King's and Lord Treasurer's Remembrancer the fragments of a small handled Jug of red earthenware, with green glaze and pinched foot rim, found with a hoard of coins on the north side of the River Don, near Bridge of Don, Aberdeen.

The following Donations to the Library were intimated and thanks voted to the Donors:—

(1) By G. T. CLINDENING, Adelaide.
The House of Glendonwyn. Part X.

(2) By O. M. DALTON, M.A., F.B.A., Hon. F.S.A.Scot.
Den Nordiska Folkvandringstidend Kronologi. By Nils Åberg.
Scythian Art. By Gregory Borovka. Translated from the German by Professor Childe. London, 1928.

(3) By A. STUART WIGHTMAN, F.S.A.Scot.
A History of the Battle of Bannockburn Fought A.D. 1314. By Robert White. Edinburgh, 1871.
Preface to the Rule of the Order of the White Rose.
Order of the White Rose.
Order of the White Rose. July, A.D. 1889.
The Thames Valley Legitimist Club. January 1895.

(4) By A. D. LACAILLE, F.S.A.Scot., the Author.
Les Quartzites taillés de la région londonienne. Extract from *Compte-Rendu du Douzième Congrès Préhistorique de France*. Toulouse et Foix, 1936.

The following Purchases for the Library were announced:—

Royal Commission on Historical Monuments, England. Middlesex. London, 1937.

Shrines and Homes of Scotland. By Sir John Stirling Maxwell, K.T. London, 1937.

Germanische Tuchmacher der Bronzezeit. By Karl Schlabow. Neumünster, 1937.

Early Man as depicted by leading authorities at the International Symposium. The Academy of Natural Sciences, Philadelphia. March 1937. Edited by George Grant MacCurdy. London, 1937.

Cornish Crosses. By T. F. G. Dexter, B.A., B.Sc., Ph.D., and Henry Dexter. London, 1938.

Coinage and Currency in Roman Britain. By C. H. V. Sutherland. Oxford, 1937.

The following Communications were read:—

1.

SCOTTISH GRAVERS OF FLINT AND OTHER STONES.

By A. D. LACAILLE, F.S.A.Scot.

A considerable bibliography is devoted to the prehistoric graver, but the monograph of the late Capitaine Maurice Bourlon, published in 1911, remains as the standard work on this implement and its principal variations, which occupied so important a place in Upper Palæolithic cultures.¹ Although discoveries made in the last quarter of a century have added materially to knowledge by bringing to light certain types, the student of stone industries turns to Bourlon's treatise as the chief reference. Works in the English language solely given up to the tool are limited in number, the best known and most often quoted being a contribution by Mr Miles C. Burkitt to the *Proceedings of the Prehistoric Society of East Anglia*, vol. iii., part ii., pp. 306-10. The same author also discusses the subject in his text-book.² Lately, Mr N. V. Noone advanced an elaborate classification resulting from long collaboration with Mr H. H. Kidder.³ The inquirer is referred to these and the various works of foreign prehistorians. Some archaeologists at home and abroad have assiduously studied and practised the production of graters to determine the technique of prehistoric man in making the peculiar implements.⁴

Certain stone artifacts belonging to very early culture-phases have been claimed as graters, but it is in the different divisions of the Upper Palæolithic that they abound to such extent as virtually to constitute the type tools of the stone industries. They may well have served a number of uses other than carving bone and incising realistic and conventional designs upon the walls of caves, rocks and tablets.⁵ These tools degenerated towards the close of the Magdalenian and with the

¹ "Essai de classification des burins, leurs modes d'avivage," in *Revue Anthropologique*, tome xxi, pp. 267-78.

² *Prehistory* (2nd Edition), pp. 68-71.

³ *Journal of the Royal Anthropological Institute*, vol. lxiv, pp. 81-92.

⁴ To M. Léon Coutier, of Noisy-le-Sec (Seine), prehistorians owe a lasting debt of gratitude for having shown, by experiments, carried over a number of years, different methods of producing stone implements. Without doubt he has successfully recaptured a number of prehistoric techniques, and the methods adopted by him in the manufacture of artifacts have solved many problems.

Among the most important of his long researches are to be included M. Coutier's experiments in making graters. His displays before the Société Préhistorique Française are commented on from time to time in its *Bulletin*.

⁵ A suggestion, which ought not to be overlooked, has been advanced that graver-ended implements may have been employed as "fabricators" for retouching or pressure-trimming. Without

decadence of art productions, but gravers survived through Mesolithic and even into later stone industries. Although gradually becoming rarer in late industries their presence suggests bone-working or such operations as the cutting of lines on stone or other substances. As instruments primarily intended in Upper Palæolithic times for carving, true gravers could be dispensed with in the simpler work of the later culture-phases which usually involved no more than the mere cutting of materials and producing lines.

Compared with their Palæolithic forerunners the relatively uncommon gravers of late stone industries are generally inferior and rudimentary. This is particularly noticeable in industries, pure, hybrid or mixed, showing a survival of tradition: still, carefully wrought specimens are occasionally met with in these.

The essential characteristic of the graver is the chisel-edge formed by the meeting of two bezels, single or multi-faceted, at the extremity of a flake or blade, or sometimes of a core lending itself to suitable treatment. To produce the simple or "ordinary" graver (Fr. *burin bec-de-flûte*) one or more small flakes must be detached obliquely from each side of a flake or blade.¹ Thus, what is in reality the intersection of striking-platforms imparts a much more efficient and durable working tip than the flat or conical ends of such tools as borers. Moreover, the chisel-edge enables the operator to perform certain work impossible with narrow points. Stones, conveniently edged by nature, broken implements, flakes and blades, or cores terminating appropriately, were also used as gravers: because, to render them quite serviceable they needed little or sometimes no treatment beyond the provision of the easily produced graver-facet.²

Multi-faceted gravers with convex cutting-edges, required for a concave or gouge cut (as opposed to the V-shaped cut of the ordinary graver), were generally made from very thick flakes or even cores. But among gravers derived from thick flakes and cores are some suitably treated for making a deep V-shaped cut.³

stressing this, it may nevertheless be said that the wear evident on numbers of stone implements, typologically classifiable as gravers, indicates that many were used upon material less tractable than osseous substances and harder than the cave-walls and rocks upon which gravers served as mentioned.

¹ *E.g.* No. 1, fig. 4, and Appendix, p. 190.

² *E.g.* Nos. 3 and 8, fig. 4, and Appendix, pp. 190 and 192.

³ As the facets deliberately produced at the working-end of gravers, fashioned in these stones best responding to intentional blows and most clearly showing fracture features, bear a slight depression which is in fact a hollow of percussion, graver-facets were assumed to have been obtained by direct downward blows upon the end of the material under treatment. Inquirers, however, have raised objections against the assumption that gravers were prepared in this manner: they say that it is a difficult operation and the occasion of injury to the operator's fingers or of damage to

Perusal of an article on Yorkshire gravers by Mr Francis Buckley,¹ bringing us nearer the country with which we are concerned, suggested a line of research in Scotland, where tools of this kind had received little attention. Probably the reason for this disregard is because few students have ready access to collections from Upper Palaeolithic sites yielding these implements in numbers, the handling of which would make them familiar with different types. My own identification of an unmistakable graver in a collection of Scottish stone implements was an added incentive to pursue an investigation in the hope of showing that artifacts classifiable

flake or blade. Expert flint-workers hold that these objections are unsound, because anyone who has acquired the skill to fashion stone implements experiences no difficulty in making the graver blow as he can strike exactly where desired. In this connexion Professor A. S. Barnes has shown me that he can make gravers, using hammers of quartzite, other hard stones or even metal, without injuring the end.

The direct blow method must certainly have been used in the manufacture of thick multi-faceted gravers; but in the making of simpler gravers, with but one or two lateral facets obliquely truncating thin flakes or blades, another procedure may also have been adopted. Experiments support this opinion, as M. Coutier's tests go to show an extremely simple way of striking off lateral spalls from a flake or blade. His process consists of smartly hitting with a baton of hardwood, antler or bone upon the side of a flake or blade held in an inclined position on an anvil of a stone softer than that being treated. A blow fairly dealt will detach a spall equal in length to the distance between the spot struck by the hammer and the end of the flake or blade impinging upon the anvil. The force is shared equally between the hand and the end of the graver in the making in contact with the anvil-stone. Actually it is equivalent to striking the end of the flake or blade, but the blow is given by the piece under treatment forcibly striking the anvil (equivalent in this case to a hammer), instead of the hammer striking the graver. The effect of the anvil's being of soft stone is to give diffused bulbs of percussion on the spall detached, and, of course, the flake-scar on the graver shows a corresponding hollow. These features may be considered as normal bulbs and hollows of percussion, but with this particular technique they result from the sudden arresting by the anvil of the fracturing force. This side-blow method invariably results in obtaining a perfectly clean graver-facet, whereas it is often found that to get a good graver-facet by the direct downward blow system the piece has to be struck more than once. Specimens figured here seem to afford instances of such failures.

That many graver-spalls bear salient bulbs of percussion would point to the practice of prehistoric man (necessarily an expert in making stone tools and presumably cognisant of the best methods to follow in implement manufacture) of using the direct blow in fashioning gravers or placing the graver in the making upon an anvil of hard stone. In this respect it may be mentioned that at the Solutrean station of Badegoule (Dordogne) Dr André Cheynier has recovered pieces of hard stone with abrasions in the centre, apparently caused by repeated percussion as if they had served as anvils in the making of gravers. Other Upper Palaeolithic sites have yielded similarly pitted anvils of hard and soft stone, possibly employed in the production of such instruments.

Without detracting in any way from Coutier's admirable discovery, it is thought that his method cannot have been the usual one of prehistoric man, because so many gravers, even thin ones, are short and there would not be room for striking between the fingers and the end of the graver. Scottish examples known to the present writer mostly appear to derive from the direct blow process.

It has to be added in regard to the thick gravers already mentioned that, as the force of the side-blow and anvil method is only half that of the direct downward blow, it would be extremely difficult to strike off spalls in this way.

¹ *Proc. Prehistoric Society of East Anglia*, vol. iii., part iv., pp. 542-7. An angle-graver, preserved in the National Museum, is figured for comparison by this author, p. 546, fig. 2 (g). Its provenance has not been determined, but in size and form it is like some examples identified in Tweedside lots. It resembles the artifact represented by No. 5, fig. 1, here.

as gravers existed in some numbers north of the Border. Besides, the Abbé H. Breuil, when referring to a lot of stone implements from the 25-30 feet Raised Beach at Campbeltown, preserved in the National Museum, remarked that, as he had recognised a flake among them as one detached in the manufacture of a graver,¹ examples of the tool should be found.² With these premises, therefore, the prospect of determining a fairly wide distribution of gravers in Scotland appeared favourable. Though continuous inquiry has not been rewarded by many examples, enough chisel-ended tools have been found to justify reference to stimulate further research.

As a whole the specimens are poor and their variety limited, a fact not altogether strange when their associations and the material available for tool-making in some districts are considered. While gravers have been noticed among sets which include microliths, examples have also been recognised in more easily datable contexts: and some have turned up in unexpected circumstances. Several, identified in general collections, are but surface finds, and therefore cannot be strictly dated.

My experience proves that gravers should be most keenly sought in Scottish collections of stone implements comprising microliths. When gravers occur in a microlithic industry they are among the largest of the artifacts. This holds in Scotland, but the figured examples from sites yielding microliths are small compared with most gravers found in other countries. In Scotland this fact is undoubtedly due to the scarcity of goodly sized material, and cannot be explained merely by a theory that there was a real call for diminutive tools of this type. Considering the probable uses of these tools it is evident that very small gravers are not readily manageable.

Tweedside, a region rich in microliths, furnishes the majority of the gravers identified, and these mostly of green chert. From this rock, occurring usually in small nodules, only small flakes could be struck. A similar observation may be made with regard to flint implements from this district. On Deeside, however, man was decidedly more fortunate in the exercise of some choice in his raw material: and, in connection with the artifacts presently concerning us, this is borne out by the fact that fairly large gravers of flint have been picked out in a collection from Banchory, consisting mainly of microliths worked in this sort of stone.³

¹ *Proc. Soc. Ant. Scot.*, vol. lvi, p. 263, and No. 8, fig. 2, here.

² It was with gratification I was able last summer to show M. Breuil the greater number of the specimens figured in these pages.

³ Miss Hilda M. Leslie Paterson and A. D. Lacaille in *Proc. Soc. Ant. Scot.*, vol. lxx, pp. 430-1.

Forms of gravers have been remarked among stone artifacts from the Orkneys on the one hand, and the southern and south-western counties on the other. That inspection of a few collections should also have revealed the presence of implements with chisel-like working-ends in lots from regions situated between leads me to believe that other persons, with greater facilities than are now mine, will establish a wider distribution.

In his paper Mr Buckley mentions *micro-burins* as well as true gravers,¹ but it is thought that (apart from the necessary inclusion of the former in any description of a microlithic industry in which they may occur) it is advisable to reserve detailed reference to Scottish *micro-burins*, despite their graver-like attributes, to a notice more closely confined within the limits of a study of stone-fracture. Illustrations embodied in the work on Yorkshire gravers show how closely some of the specimens resemble artifacts drawn for the notes now laid before the Society. Many of the Scottish specimens are peculiar, but all bear the distinguishing features of a deliberately produced chisel-edge. In examining the implements figured, the materials in which some are fashioned must be taken into account as these are not devoid of interest. Not only must the raw material—often indifferent—be considered, but it has to be remembered that most of the artifacts consist of surface finds. As such many have been damaged by accidents to which the circumstances of their situation exposed them throughout the ages.

While inquiries make it clear that gravers are scarce in Scotland, there do occur some stone implements terminating like narrow chisels which merit record. Although many of these artifacts might be included in this paper, comment and figures are limited meantime to a selection. Some of the specimens included in this possess the more characteristic and recognisable features. The two principal illustrations show simple examples and variants, also spalls presumed to have been removed in the production or re-working of gravers (figs. 1 and 2).

Personal examination of specimens gives me reason to think that angle-gravers are the commonest type of chisel-ended implements in Scottish collections from localities where microliths have been found.²

¹ *Loc. cit.*, p. 543.

² Angle-gravers are comparatively numerous in the Mesolithic industries from Continental regions of utmost interest to Scottish geologists and archaeologists, so many important representative series from which are illustrated by Dr J. G. D. Clark in his *The Mesolithic Settlement of Northern Europe*. The presence of these tool-types in Scotland suggests that, however late or mixed many of the Scottish microlithic industries may be, they are the products of peoples who had adopted many forms to answer certain needs.

All the pieces composing fig. 1 are tools with simple cutting-edges. Of these, No. 1 alone has the graver-facet backed against a trimmed edge.

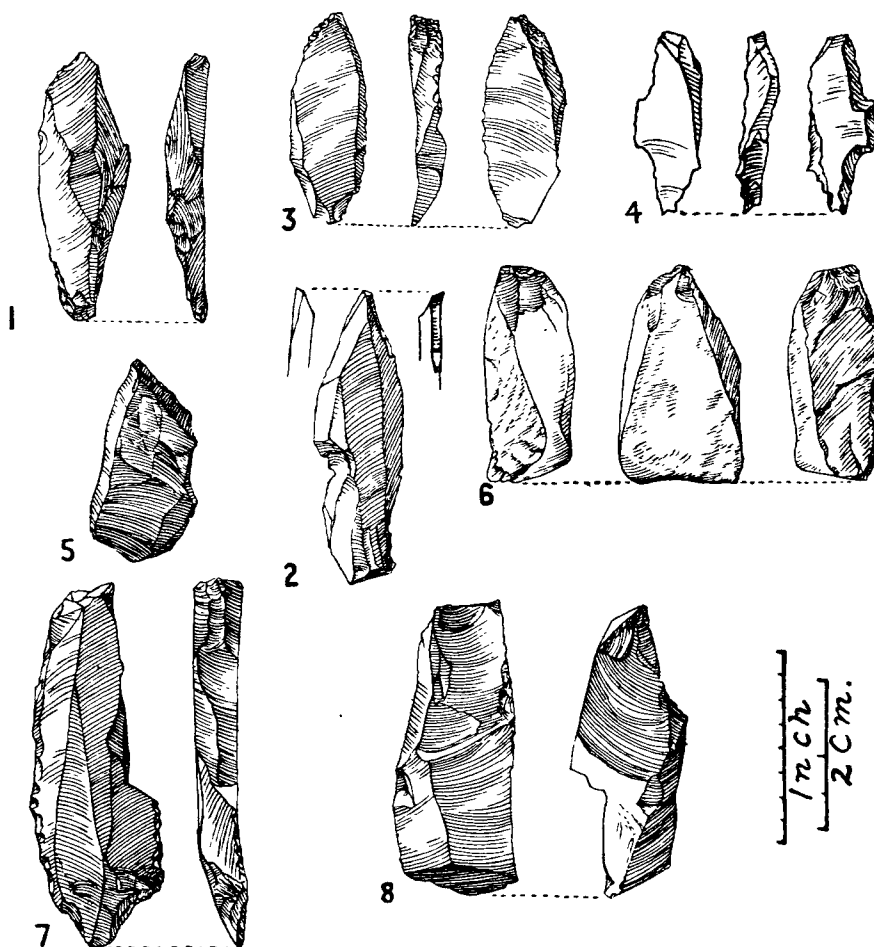


Fig. 1. Scottish Gravers.

edge; the others are faceted on one or both sides. They are detailed as follows:—

No. 1. On blade, triangular in section, struck from a core; of light flint; one graver-facet on right backed against a trimmed edge; extremity defective; $1\frac{1}{2}$ inch (0.036 m.) long. Found by Dr W. A. Munro near Dryburgh, Mertoun, Berwickshire.

No. 2. Single-blow graver, worked at end of blade of light flint struck from core; a narrow graver-facet on right backed against narrow

remaining portion of flake-facet on left; trimmed on the right at lower end. The graver-facet appears to have been obtained by the side-blow and anvil method. Length, $1\frac{1}{2}$ inch (0.038 m.). Found on Shewalton Moor, Ayrshire.

No. 3. On flake of light flint struck from a core: two facets on right meeting a single facet: cutting-edge worn rather than injured in the making: $1\frac{1}{4}$ inch (0.028 m.) long. Found by Mr Ian Muirhead at Geddens, Ballantrae, Ayrshire.

No. 4. Fashioned from flake of light brown flint: two small facets across top, produced after detaching lengthwise one spall on right, meeting an oblique facet on other side: $\frac{1}{16}$ inch (0.024 m.) long. Found by Miss H. M. Leslie Paterson near Birkwood, Banchory, Kincardineshire.¹

No. 5. Simple angle-graver, on thick flake of green chert: cutting-edge formed by meeting of two facets on right and one on left: $1\frac{1}{8}$ inch (0.027 m.) long. Found by Mr C. J. Brown at Dryburgh, Mertoun, Berwickshire.

No. 6. Pebble of hyaline quartz treated at one end by faceting to a chisel-edge. The hollows of percussion show some fissures, and the sharp edge appears slightly injured. These features are probably due to the nature and erratic fracture of this material, in this case of poor quality. Along the sides, however, the facets are uniformly clean. Length, $1\frac{5}{8}$ inch (0.029 m.). Found by Dr W. J. McCallien within the 25-30 feet Raised Beach at Campbeltown, Argyll, with artifacts which will duly be described.

No. 7. Worked at end of truncated thick flake of light yellowish-grey flint struck from a core: one thick spall removed on the right, and the facet so produced treated by detaching three tiny and narrow flakes. Across the top one spall was detached, the meeting of the facets giving the desired cutting-edge, now somewhat injured. Near the lower end of the tool there is some trimming on the right. Length, $1\frac{3}{4}$ inch (0.048 m.). Found by Miss H. M. Leslie Paterson near Birkwood, Banchory, Kincardineshire.²

No. 8. Thick specimen, of dark purplish-brown chert; apparently remainder of a core with a long facet on the left incurving at one end to the right against which is backed a short graver-facet. The edge is still sharp and serviceable. Length, $1\frac{1}{2}$ inch (0.038 m.). Found by Dr W. A. Munro near Dryburgh, Mertoun, Berwickshire.

Grouped in the next set (fig. 2), of which details follow, are different forms of implements and two narrow flakes or spalls, doubtless detached in the making of gravers.

No. 1. Double graver in portion struck from a nodule of green chert of indifferent quality, the upper surface retaining much of the brown cortex: working-edge at one end formed by intersection of one long facet on the right backed against a shorter on the left. The other end shows two scars indicating secondary removal of a spall. The lower facet meets another produced on the left through the crust. Specimen

¹ *Proc. Soc. Ant. Scot.*, vol. lxx, pp. 430-1.

² *Ibid.*

measures $1\frac{7}{32}$ inch (0.031 m.) in length. Found by Dr W. A. Munro near Dryburgh, Mertoun, Berwickshire.

No. 2. Double graver worked in thick triangular piece of a flake

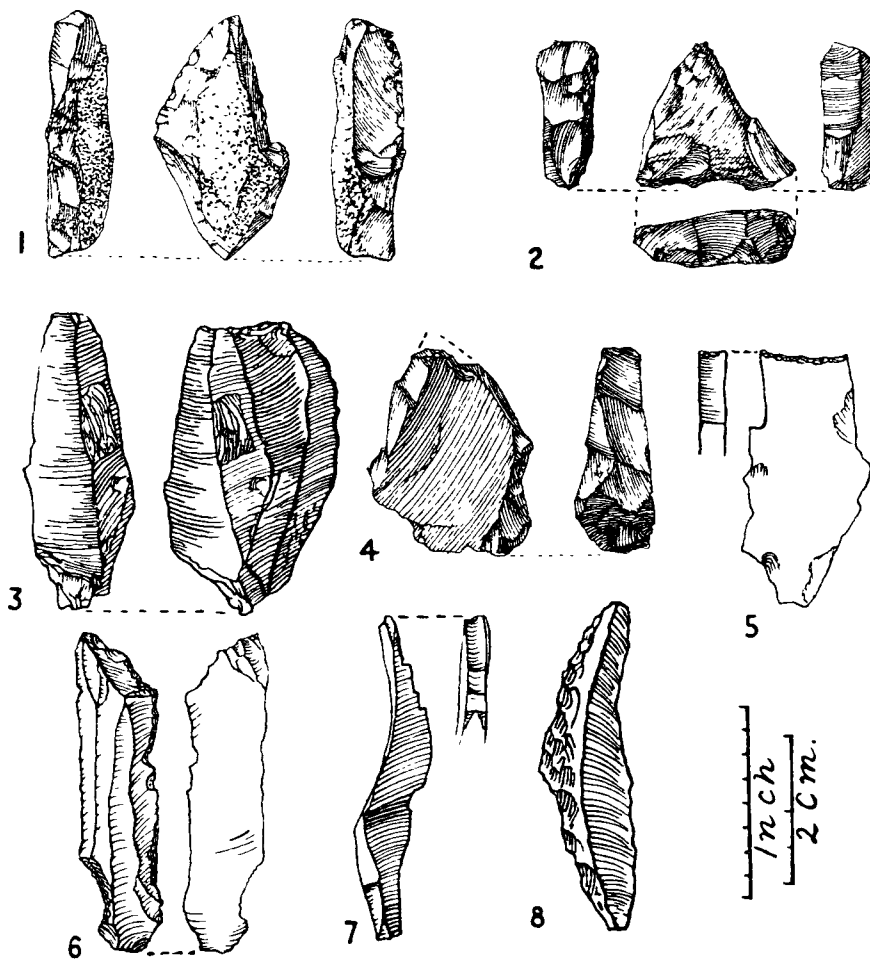


Fig. 2. Scottish Gravers.

of mottled and banded grey flint; chisel-edge at top formed by a graver-facet on the right backed against the faceted vertical left edge. The right side meets the faceted vertical edge at the base in a graver-facet, the intersection giving a working-edge; $\frac{1}{8}$ inch (0.02 m.) by $\frac{1}{8}$ inch (0.02 m.). Found by Mr Thomas Linklater, South Ettit, Rendall, Mainland of Orkney.¹

¹ Robt. Rendall in *Proc. Orcadian Antiquarian Society*, vol. xiv. pp. 48-51.

No. 3. Angle-graver, light grey cherty flint: the intersection of a facet extending almost the full length of left side with a trimmed edge at top forming cutting-edge: $1\frac{1}{2}$ inch (0.038 m.) long. From excavation of long stalled cairn, the Knowe of Yarso, Rousay, Orkney. Figured after J. Graham Callander and Walter G. Grant.¹

No. 4. Although the greater part of the graver-facet remains on the left of this angle-graver, the edge opposite which meets it is so bruised and injured, apparently by fire-action, that the actual chisel-edge is now wanting. The specimen is of grey banded flint of poor quality and now measures $1\frac{5}{12}$ inch (0.029 m.) in length. Found by Mr Thomas Linklater at South Ettit, Rendall, Mainland of Orkney.²

No. 5. Angle-graver on flake of light grey chert flint: chisel-edge formed by meeting of long facet with a slightly concave trimmed edge at the top: $1\frac{5}{16}$ inch (0.033 m.) long. From Freswick Bay, Caithness, and now preserved in the National Museum.

No. 6. An implement resembling a typical flat graver (*burin plan*), worked in a blade of dark grey flint struck from a core: steeply trimmed along parts of two long sides to form at bulbar end of upper surface a slight concave edge and opposite a long cutting-edge now partly injured. A chisel-like edge is provided at the top by the removal of four small flakes at the extremity on the bulbar face. This artifact is $1\frac{4}{5}$ inch (0.047 m.) in length. Found by Miss H. M. Leslie Paterson near Birkwood, Banchory, Kincardineshire.³

No. 7. Narrow flake of dark grey flint, presumably detached in the fabrication or re-working of a graver, three blows having been necessary to strike off this piece from the material under treatment. This specimen affords a good instance of a flake removed by a direct blow dealt by a hard percussion tool upon the end of a thick flake or blade. In length this specimen measures $1\frac{1}{8}$ inch (0.043 m.). Found by Miss H. M. Leslie Paterson near Birkwood, Banchory, Kincardineshire.⁴

No. 8. Flake of grey flint, identified by the Abbé H. Breuil as one detached from a batter-trimmed flake or blade in the manufacture of a graver: $1\frac{1}{16}$ inch (0.043 m.) long. Among hoard of stone artifacts found within the 25-30 feet Raised Beach at Campbeltown, Argyll, and now preserved in the National Museum.⁵

A remarkable implement from Whitrighill, Mertoun, Berwickshire, in the collection of Mr C. J. Brown, although not possessing any true graver-facets, is figured as an artifact trimmed to a chisel-edge (fig. 3). As such it has a place in these notes. The curious specimen is an example of a tool fashioned in the only local raw material found suitable and tractable enough for making a special instrument of comparatively large size required for some special need.⁶ Besides the peculiarity of

¹ *Proc. Soc. Ant. Scot.*, vol. lxxix, pp. 335 and 337.

² Robt. Rendall, *loc. cit.*

⁴ *Ibid.*, p. 430.

³ *Proc. Soc. Ant. Scot.*, vol. lxx, p. 431.

⁵ *Cit. supra*, p. 183.

⁶ Mr Brown and others have already found in this district some large implements made of quartz and quartzite, rocks which occur here, as in many other parts of Scotland, in the form of pebbles and cobbles.

workmanship is the interest it offers as an implement of rudimentary appearance. It consists of a pebble of dark fawn jaspilite with carmine marbling. $\frac{2}{3}\frac{7}{2}$ inch (0.022 m.) thick at the lower end. $2\frac{1}{6}$ inches (0.071 m.) long and $2\frac{5}{2}$ inches (0.055 m.) wide. The flattish nether surface shows faint flake-scars of natural origin. From the dressed areas it appears that jaspilite is not so responsive to intentional blows as the local chert, but as it is certainly a rock with some of the properties of conchoidal

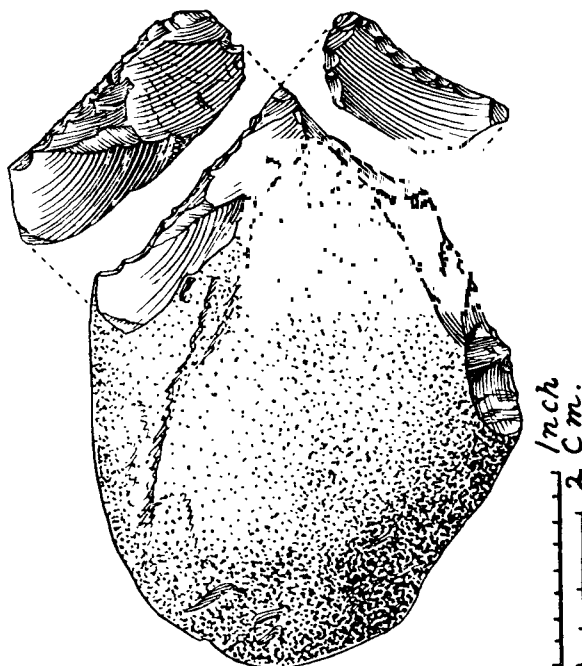


Fig. 3. Jaspilite Chisel-ended Tool from Whittrighill, Mertoun.

fracture, a degree of control could be exercised by the craftsman: in this regard it seems much superior to most grades of quartzite. The edges attest that quite a number of strokes were necessary to remove even small flakes, the scars of which now show a certain amount of weathering. The naturally rounded form of this pebble-tool comfortably suits the grip. The implement seems to have seen considerable service although the working-edge is still sharp.

It would be ungrateful of me to conclude without expressing my sense of indebtedness to friends who so kindly allowed me to examine their collections and figure chosen specimens. These, it is believed,

add to knowledge by demonstrating that the products of Scottish stone industries comprise a class of artifacts with features akin to those possessed by tools which fall into a well-defined category.

APPENDIX.

The Scottish implements terminating in narrow chisel-edges may be compared with some typical gravers from classic French sites (fig. 4). Illustrations of these, mostly extracted from Boursillon's work, are shown, as it is thought that drawings of certain forms, which some Scottish ones resemble, will serve in the identification of further examples to amplify the brief personal record in the foregoing pages. The French gravers figured here are fashioned in that excellent and responsive siliceous material of the Périgord district, which usually occurs in nodules larger than is the case with the different stones of this country. Even in the representations of the greater number of the Scottish artifacts, whose character is apparent, the inferior quality of the native rocks manifests itself.

It would be vain to endeavour to press an analogy between the Scottish specimens and the enormously more ancient French palæoliths which belong to culture-phases unknown in Scotland. Nevertheless, an attempt is made to show from a selection of Continental instances the typical features borne by this specific category of stone tools. These traits are also discernible in the Scottish implements, although generally diminutive and manufactured in substances rarely comparable in point of tractability. Characteristic Palæolithic specimens have advisedly been taken rather than a choice of less typical gravers belonging to industries nearer our own in respect of age.

On account of the endless variety of forms and combinations assumed by the gravers of Palæolithic cultures, the foreign specimens as sketched must be taken only as comparative examples in this study. In the enumeration of the individuals of the series the features of the Scottish implements may be set against those characteristics which distinguish the French pieces figured as types.

No. 1. "Ordinary" (*bec-de-flûte*) graver; single graver-facet backed against single graver-facet; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Boursillon.¹ To show essential characteristics of a simple graver.

No. 2. Graver fashioned at end of a blade trimmed to a point; single graver-facet backed against a trimmed edge; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Boursillon.² Cf. No. 1, fig. 1.

No. 3. Single blow graver; a single graver-facet backed against a flake-facet; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Boursillon.³ To show simply improvised tool. Cf. No. 2, fig. 1.

¹ *Revue Anthropologique*, tome xxi. p. 268, and No. 1, fig. 2, p. 269.

² *Ibid.*, p. 270, and No. 12, fig. 2, p. 269.

³ *Ibid.*, p. 270, and No. 14, fig. 2, p. 269.

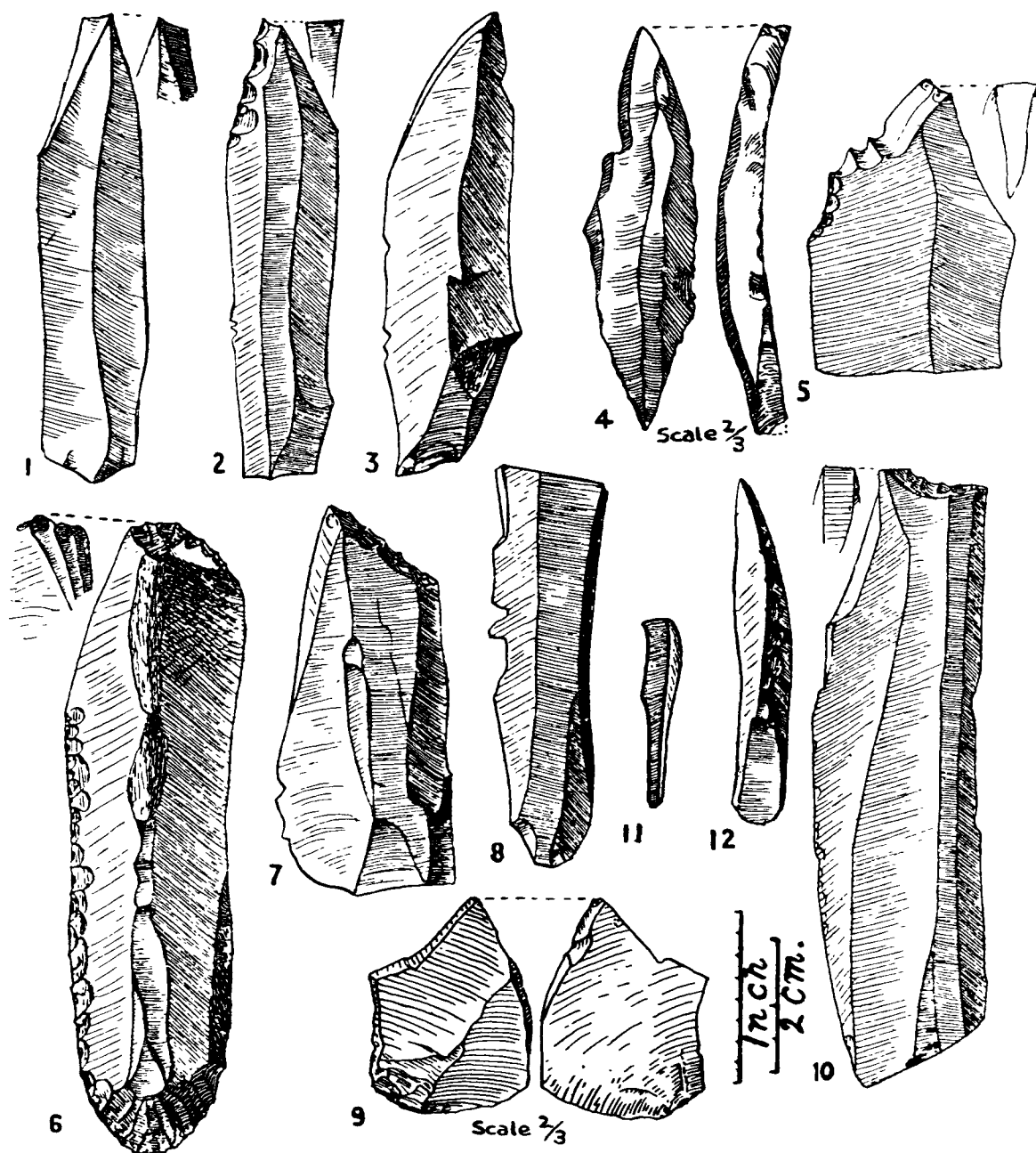


Fig. 4. French Gravers for Comparison.

No. 4. Double "ordinary" graver: each end comprising a cutting-edge formed by a graver-facet backed against a graver-facet: Magdalenian: La Grotte des Eyzies, Les Eyzies-de-Tayac (Dordogne). After British Museum Guide.¹ Cf. No. 1, fig. 2.

No. 5. Reworked graver: two graver-facets backed against a single graver-facet: Aurignacian; Abri de Cro-Magnon, Les Eyzies-de-Tayac (Dordogne). After Bourlon.² Cf. Nos. 3, 4, and 5, fig. 1.

No. 6. Flat graver (*burin plan*): three small facets at one end on bulbar face forming edge with the trimming on upper surface; the other extremity dressed to end-scraper: Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Bourlon.³ Cf. No. 6, fig. 2.

No. 7. Oblique angle-graver; graver-facet backed against the trimmed uppermost edge of a truncated blade; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Bourlon.⁴ May reservedly be compared with No. 2, fig. 2.

No. 8. Angle-graver on end of a broken blade: single graver-facet backed against convenient edge provided by break; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Bourlon.⁵ To show simply improvised tool.

No. 9. Angle-graver. After Delage, by whom ascribed to Mousterian;⁶ Abri des Merveilles, Castelmerle, Sergeac (Dordogne). Cf. No. 4, fig. 2.

No. 10. Concave angle-graver; graver-facet backed against a trimmed edge at end of blade; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Bourlon.⁷ Cf. Nos. 3 and 5, fig. 2.

No. 11. Spall detached from a plain flake or blade in the manufacture of a graver; Aurignacian; Abri de Masnaigre, Marquay (Dordogne). After Bourlon.⁸ Cf. No. 7, fig. 2.

No. 12. Spall detached in the making or re-working of a graver; example removed from a trimmed edge; Aurignacian; Abri de Masnaigre, Marquay (Dordogne).⁹ After Bourlon. Cf. No. 8, fig. 2.

¹ *A Guide to Antiquities of the Stone Age* (1926 edition), fig. 135 and p. 134.

² *Revue Anthropologique*, tome xxi, p. 276, and No. 10, fig. 4, p. 275.

³ *Ibid.*, p. 271, and No. 20, fig. 2, p. 269.

⁴ *Ibid.*, p. 270, and No. 7, fig. 2, p. 269.

⁵ *Ibid.*, p. 270, and No. 11, fig. 2, p. 269.

⁶ *Compte-Rendu du Douzième Congrès Préhistorique de France* (Toulouse and Foix, 1936), p. 600, and No. 72, fig. 14, p. 602.

⁷ *Revue Anthropologique*, tome xxi, p. 275, and No. 2, fig. 4, p. 275.

⁸ *Ibid.*, p. 275, and No. 19, fig. 3, p. 273.

⁹ *Ibid.*, pp. 276-7, and No. 12, fig. 4, p. 275.

II.

EXCAVATIONS OF THREE NEOLITHIC CHAMBERED CAIRNS
—ONE WITH AN UPPER AND A LOWER CHAMBER—
IN THE ISLANDS OF EDAY AND THE CALF OF EDAY
IN ORKNEY. BY CHARLES S. T. CALDER, A.R.I.A.S.,
F.S.A.Scot.

CAIRN, HUNTERSQUOY, EDAY.

With the approval of the proprietor, Major Harry H. Hebden, M.C., and under the auspices of our Society, in 1936 and again last year, I had the privilege of excavating certain prehistoric monuments in the islands of Eday and the Calf of Eday in Orkney. Two of these structures lie in the main island, the first being situated in the middle of a field 500 yards south-west of Carrick Farm and about 200 yards east of the ruined croft of Braeside. The latter name appears on the Ordnance Survey Map, but according to the proprietor the locality is more correctly known as Huntersquoy. On the map the site is identified as "Erd House" and "Standing Stones" jointly, but otherwise it does not seem to have been recorded.

No appreciable mound marked the position, which was overgrown with grass, peat, and heather. The existence of building was revealed by a lintel lying at ground-level over the entrance of a choked-up passage on the east, and by a small opening marked X on plan (fig. 1), which was broken through the northmost lintel of a slab roof covering a debris-filled underground chamber. Besides these evidences, the stumps of two slabs, Y, stood up on end near the middle of the site above the roof of the chamber. Their presence on the spot no doubt gave rise to the term "Standing Stones," but the name, as will be explained later, has been misapplied.

Excavation disclosed, not an "Erd House," as stated, but a neolithic burial cairn of very remarkable construction, since it contained two separate but contemporary chambers disposed in an unusual manner one above the other. Each chamber has been provided with a separate entrance-passageway at its floor-level, the openings to them being placed diametrically opposite one another on the circumference of the cairn in a line running east and west. The lower chamber is entirely

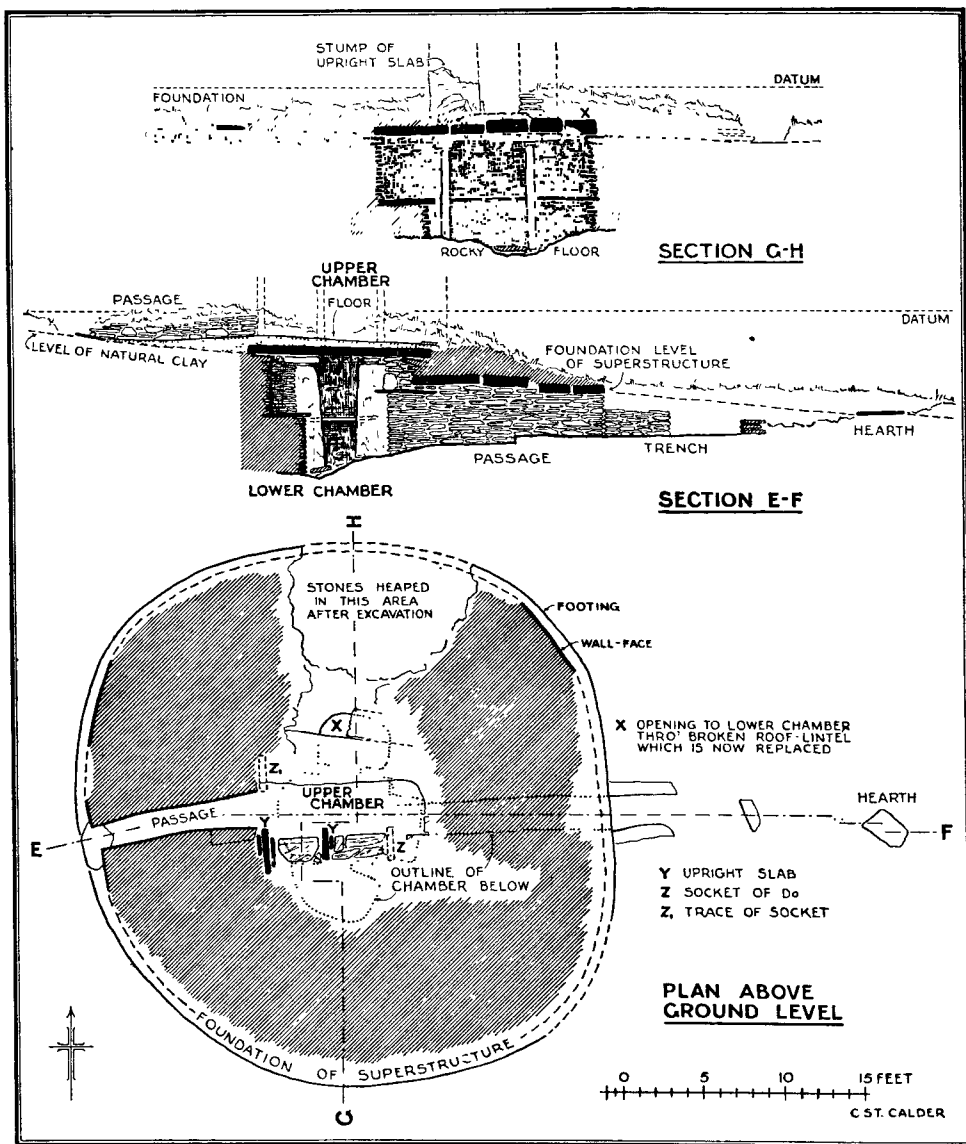


Fig. 1. Cairn, Huntersquoy: Plan and Sections.

subterranean, and the upper has been constructed in the mass of the superstructure above the natural level of the ground.

Evidently in constructing the cairn the first step had been to dig out a hole of suitable dimensions to contain the sunk chamber and passage and facing the sides throughout with a lining of rubble masonry. This lining was well built of red and grey sandstone and was 2 feet thick where measurable at the entrance. The excavators had dug down to a rough natural bed of rock which served as the floor of the chamber, the whole being roofed in by massive slab lintels, approximately at surface-level. Above this level rose the superstructure, which conformed to the slight downward slope of the ground from west to east. It appeared to have been founded on a thin layer of blue clay¹ overlying the red-clay subsoil, the outermost lintel of the entrance to the lower chamber being incorporated in the eastern arc of the foundation course.

Above ground the cairn was confined within the periphery of an irregular circle measuring from 33 to 36 feet in diameter (fig. 1). For the most part the walling around the margin had been reduced to only one course of masonry, but at two places in the northern half where more than one course survived it was seen that the lower or foundation course projected 5 or 6 inches from the face of the upper as a footing. A short length of face on the north-eastern arc consisted of four stones coursed on an inclined plane with their lower ends resting on the footing. Whether this inclination of the facework formed part of an intentional design in an outer casing wall or whether it was merely due to settlement following disturbance can hardly be decided on the meagre evidence such a short length of face supplies.

Beyond the limits of the superstructure an open trench (fig. 2) had also been formed and it extended in front of the lower passage for a distance of 8 feet 6 inches, where three courses of masonry, laid transversely, seemed to mark its termination. For the half of its length, next the entrance, the clay sides of the trench were faced with a lining of stonework, but those of the outer half may never have been similarly faced. At least on the north, where the side did not appear to have been disturbed, the face of the clay was in alignment with the stonework lining. A race-bond separated the lining of the covered passage from that of the open trench. The masonry facing of the latter survived to a height of 1 foot 6 inches only; it may have been carried higher but presumably never supported lintels. Obviously an open trench was a necessary adjunct to a passage built entirely underground, and it is

¹ It is understood locally that a stratum of blue clay occurs only at the south end of the island of Eday, from which point—5 miles away—it must have been brought to the cairn.



Fig. 2. Cairn, Huntersquoy: Entrance to Lower Chamber, with stone-lined trench in front.



Fig. 3. Entrance to Cairn on Viquoy Hill, showing beginning of stone-lined trench beyond the margin of the superstructure in front of the outermost hntel of the passage.

a feature of frequent occurrence in cairns elsewhere. It may be noted specially in connection with a chambered cairn 500 yards distant on the top of Vinguoy Hill,¹ but in this case the linings of passage and trench are continuous, without any intervening race-bonds (fig. 3). Such trenches would be filled in and camouflaged after each burial in order to conceal the entrance and keep out unauthorised persons.²

On the surface of the clay subsoil, 7 feet 6 inches in front of the outer end of the trench, a thin flat stone had been laid for use as a hearth (fig. 1). It measured 2 feet 6 inches by 1 foot 6 inches and had been cracked and discoloured by the action of fire. On top and around it was a quantity of peat ash and small-sized, jaggedly fractured, burnt stones—a few similar stones mixed through the infilling towards the outer end of the trench were also noted. The hearth may be contemporary, but no evidence was found to prove whether it was associated originally with the burial rites or with a later use for domestic purposes.

As already mentioned, both chambers in the cairn belong to the same period, and each may be regarded as typifying a local variety of its kind of monument. The upper conforms to the short-stalled type and the lower is an example of a class containing cells and recesses. Treated individually it is difficult to decide which of the two would rank as the more important. The claim for the lower to be the principal tomb is strengthened by its greater inaccessibility and by its apparently intentional concealment. At present, being intact, it is the more impressive, but what little is left of the upper, which has been considerably denuded and despoiled, is enough to suggest that it was equally imposing in appearance.

Such a two-storeyed arrangement is so rare that it is known in only one other example, at Taiverso Tuick³ in the neighbouring island of Rousay. The presence of two chambers in the latter has been known for some time, but owing to its unique character a contemporaneity of dating had been viewed with suspicion until the point was settled when the structure was completely exposed by excavation last year. Mr James S. Richardson, H.M. Inspector of Monuments for Scotland, informs me the evidence obtained now shows conclusively that the chambers are original features. In many respects the cairns of Huntersquoy and Taiverso Tuick resemble each other, the similarity between their lower chambers being specially marked. Their upper chambers

¹ *Arch. Jour.*, vol. xx, p. 34.

² *P.S.A.S.*, vol. lxviii, pp. 324, 325, fig. 7; *ibid.*, vol. lxxi, pp. 117 (fig. 3), 122; *ibid.*, vol. lxxi, p. 300; *An Inventory of Ancient Monuments in Anglesey*, p. 44.

³ *Ibid.*, vol. xxxvii, p. 73 ff. See also a report of the more recent excavations which, it is expected, will be published soon in a volume of *P.S.A.S.*

diverge more from each other in design but the construction of each with upright slabs projecting from the side walls emphasises the connecting link. The lower chambers have also points in common with a single-chambered cairn on the Calf of Eday, also described in this paper.

When operations began, the lower chamber and its passage were found to be more than half-filled with stones, earth, and mud. This material was cleared away, but seepage water continued to collect and ultimately covered the floor to a depth of more than 2 feet before it rose to an outlet-level at the mouth of the passage. As the water hampered progress it was necessary to cut a makeshift drain from the outer end of the trench, and the digging of this involved the removal of the hearth previously mentioned. Without proper drainage, however, it seems likely that water will always gather in the bottom of the chamber.

The passage (fig. 4) measures 13 feet 6 inches in length and 2 feet 6 inches high by 2 feet wide at the mouth, but the height increases inside. At a distance of 4 feet 2 inches inwards the lintels rise 5 inches, and at 5 feet 7 inches there is a descending step of 4 inches in the floor. The innermost lintel drops 4 inches, but the level of the floor underneath is 1 foot 2 inches lower than at the mouth. Five flat slabs form the lintelled roof and measure from 2 to 4 feet wide by 7 inches thick, except the innermost, which is from $2\frac{1}{2}$ to 4 inches thick. The floor seemed to have been levelled with a layer of prepared blue clay.

The chamber is entered at the middle of its eastern side. Its greatest dimensions (in its upper half) are 12 feet 10 inches long by 6 feet wide. The width is exclusive, however, of a recess, 2 feet 4 inches deep, in the wall above the passage opening, beside which the chamber is 5 feet 10 inches high. The height is almost 7 feet on the opposite side where the irregular floor is lowest, but if a flat stone laid in a rough cavity here, as shown in section AB, fig. 4, is *in situ* this dimension would be slightly less. The roof lintels, of red or grey sandstone, are laid transversely to the longer axis, which is approximately north and south. These are five in number and vary from 2 to 4 feet in width and from $6\frac{1}{2}$ to 10 inches in thickness. As in the passage a layer of blue clay seems to have levelled up the unevenness of the rough floor.

The chamber is subdivided into three compartments by two pairs of large upright slabs projecting from 1 foot to 2 feet 3 inches from the side walls, into which their outer edges are engaged. The slabs are from 6 to 9 inches thick and reach almost to the roof, the intervening spaces above their tops being filled by "eke-stones," and in three of them also by a large cantilever-like stone jutting out from the wall-head immediately under the roofing slabs. Each pair of uprights forms a transverse

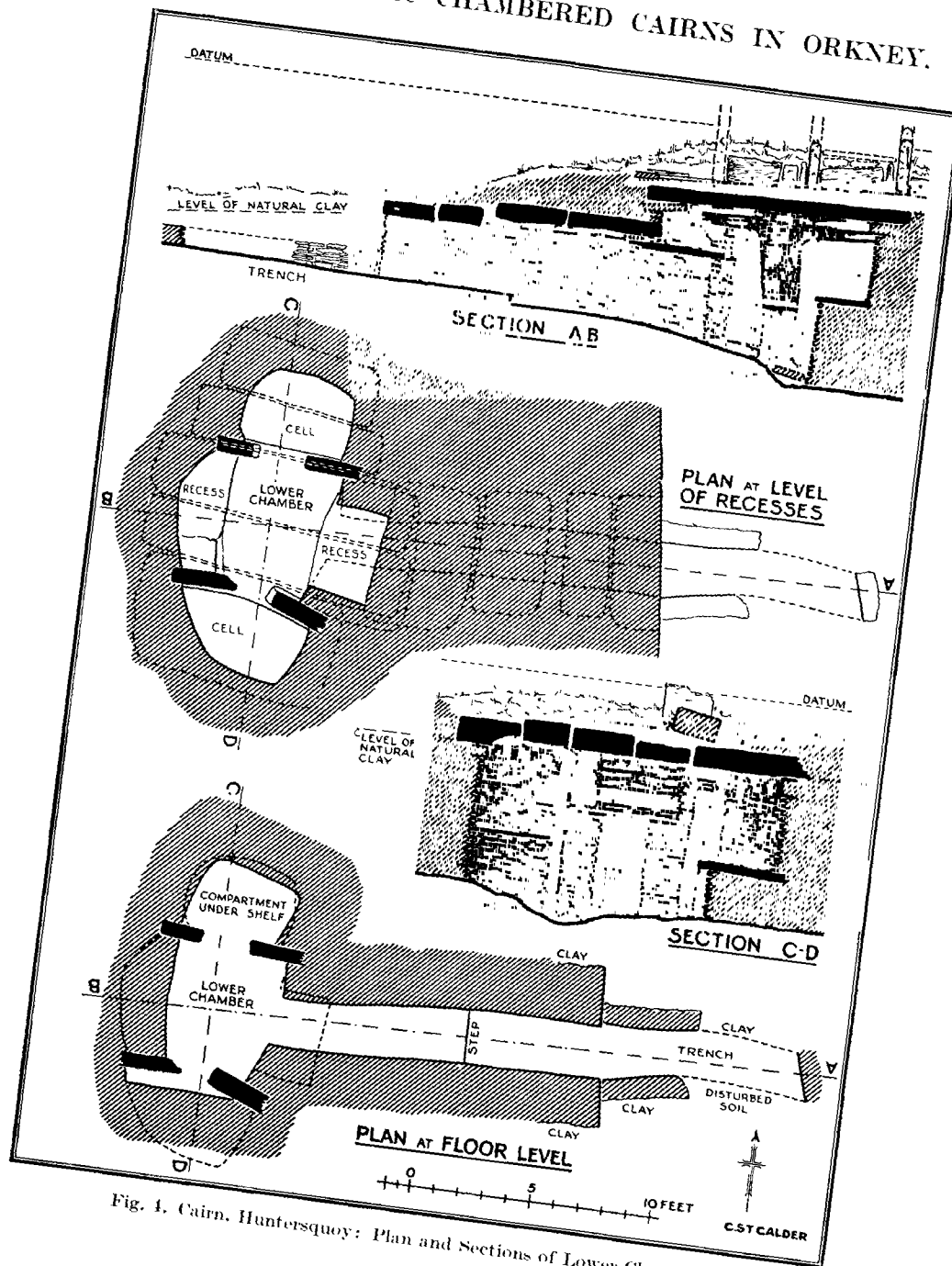


Fig. 1. Cairn, Huntersquoy: Plan and Sections of Lower Chamber.

partition. The two stones are set in alignment edgewise from opposite side walls with an interval, from 1 foot 5 inches to 1 foot 9 inches wide, left between their inner edges to form a portal between each compartment. Between the partitions, which are set 5 feet 3 inches apart, the space on the west side opposite the entrance is stall-like, while the spaces on their farther sides, constituting the end compartments, terminate as cells with rounded walls.

Several uncommon features present themselves in the compartments. The stall-like space of the central one is filled in solid with built masonry to a height of 3 feet 6 inches above the main floor. A single stone, $2\frac{1}{2}$ to 5 inches thick, rests on top of this seating, and forms at once a ledge or shelf and also the bottom of the upper part, which is left as an open recess up to the roof. On the east side the recess above the entrance, measuring 3 feet 2 inches wide by 1 foot 11 inches high, has been constructed in the walling up to the roof, and its bottom is the same slab that serves as the innermost lintel of the passage. In the southern compartment, which is occupied wholly as a cell measuring 5 feet 7 inches wide by 3 feet deep and 4 feet high, the bottom is also raised 2 feet 4 inches above the main floor. It consists of a large single slab, 4 inches thick, which is bonded into the wall where available, and is supported in front next the uprights on built masonry presenting a solid face. The northern compartment is distinguished from the last by the absence of any similar masonry across the front. At least, if such stonework ever existed no trace now survives, and the present appearance of the compartment is that of a tier of two cells, one above and one below a stone shelf. The upper measures 4 feet 6 inches wide by 3 feet 3 inches deep and 3 feet 9 inches high; the lower, 4 feet wide by 3 feet deep and only 2 feet 2 inches high. Owing to the rocky floor of the latter being very uneven, and in places rising higher than the general floor-level, it is questionable if this part were ever intended to be used for burial purposes, the main repository for the remains of the dead probably being that of the upper. The shelf, a thin slab only $1\frac{1}{2}$ inches thick, is now broken, but its fractured edges still project from the walling, into which it has been bonded. Immediately below it two or three courses of stones are corbelled out slightly from the face to act as a scarcement giving additional support. The compartments are all roofed over by the main lintels, and their walls are curvilinear on plan but not "bee-hived" in section. Round the wall-head the topmost course of masonry is built of larger stones than the rest, and it projects about 2 inches from the face below. The stones in it vary from 6 to 9 inches high, while those in the wall generally are barely 2 inches high on the average.

Dilapidation of the superstructure leaves the original aspect of the upper chamber a matter of some conjecture. Before excavation the most notable features remaining were the stumps of the upright slabs, Y, mentioned earlier as "Standing Stones." These are set parallel to one another, 3 feet 3 inches apart, and each has been made firm with packing stones at the base (figs. 5 and 6). Major Hebden recalls that



Fig. 5. Cairn, Huntersquoy: Interior of Upper Chamber showing Stumps of upright Slabs with bench foundation between, and also the Entrance passage.

many years ago the stones were broken by a shepherd. The taller now measures 2 feet 9 inches wide by $4\frac{1}{2}$ inches thick and 2 feet 6 inches high inclusive of earth-hold, and the shorter, similarly, is 1 foot 11 inches by 6 inches and 1 foot 5 inches. Actually they represent two of the divisional slabs of the upper chamber. Between them, and on the outer side of the southmost at ground-level, a single course of stones has been laid on bed, and together these constitute all the structure that is left of the chamber, but the original floor, which is a thick layer of prepared clay, still survives to a large extent. Also the passage leading to the chamber is clearly defined throughout the whole of its length by the

lowest two or three courses of its masonry on either side, up to 1 foot 2 inches high on the north and 9 or 10 inches high on the south (fig. 6). It penetrates the cairn on the level of the higher ground on the west and has been provided with a thin stone sill at its mouth, projecting in line

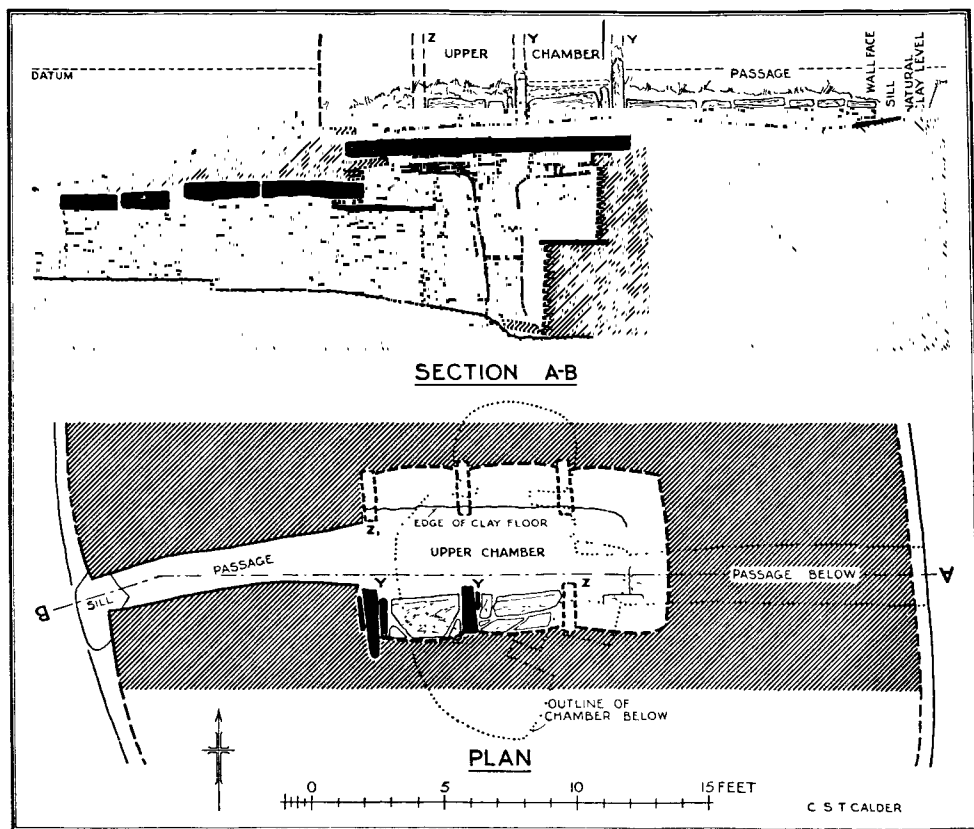


Fig. 6. Cairn, Huntersquoy: Plan of Upper Chamber showing conjectural outline, and section through Upper and Lower Chambers.

and level with the footing course. The passage is 10 feet long, 1 foot 5 inches wide at the mouth, and 2 feet $2\frac{1}{2}$ inches wide where it enters the western end of the chamber (fig 5).

Confirmed so far as the available evidence allows, and based for the rest on what has undoubtedly been a similar type of chamber in a cairn on the same island,¹ the suggested restoration of the plan of the upper chamber as indicated by a broken line in fig. 6 is felt to be justified. It

¹ Described in the report of the second cairn (Sandyhill) following.

is assumed to have been of rectangular shape, measuring 11 feet 6 inches long, including the uprights in rear of the entrance, by 6 feet 6 inches wide, and it occupies a central position in the superstructure immediately over the lintels of the lower chamber. It is also assumed to have been partitioned off into three compartments by two pairs of opposed upright slabs, with a third pair completing that end next the entrance, while the opposite end has terminated probably in a built wall. Despite the absence of wall-face in any part of the chamber its line, sufficient for guidance, can be fixed between the remaining stumps by the course of bedded stones, already referred to, the back of which would presumably have been set hard against the face of the wall. The outer edges of the upright slabs themselves would have been fixed in the wall-face for firmness, but in this case with slight hold. As usual, communication between the compartments would have been made through the central gap left between the inner edges of each pair of stones forming a partition, and the whole would have the appearance of a chamber with a row of stalls on either side. In addition to the stumps *in situ* the position of a third upright is assured by the finding of the socket-like impression of its base, Z, sunk to a depth of about 3 inches in the red clay of the floor which extended under the stonework. Traces of the groove of a fourth were also observed next the entrance at a point marked Z1 on the plan. The single course of stones beside the stumps rises from 8 to 12 inches above the floor and, in my opinion, can only represent the supporting masonry of a bench or shelf, and a thin flat stone that was of such dimensions as would fulfil this purpose was found loose on the floor in front of the space between the stumps. It is indicated in its re-set position by a dotted line on section A-B, fig. 6. No doubt, each stall would be provided with a shelf, since this is a feature not only of the chamber below, but of many others of the period. The shelving of the innermost compartment may have returned along the end wall, but generally the shelves finish directly on or into the end wall, as in the cairn at Sandyhill which follows, and in another on the Calf of Eday.¹

The prepared clay floor of the upper chamber has been laid on top of the lintels of the lower, and it has a slight downward fall of 5 inches towards the east, where it is broken off in the damaged and reduced surface slope of the superstructure. Here it is 2 or 3 inches thick, but its thickness gradually increases to 7 inches in front of the eastern stump and to as much as 10 or 11 inches in front of the western. The present northern limit of the clay is marked on the plan, but beyond it

¹ *P.S.A.S.*, vol. lxxi, p. 117, fig. 3, and p. 121.

everything has been destroyed during a previous digging when the lintels of the lower chamber at that part had been left exposed. The prepared clay also covered the passage for the greater part of its length, growing thinner till it died out some 3 feet or so from the mouth.

There were few relics, but since access could be gained to the interior within living memory it is evident that the cairn had been robbed of its contents on some earlier occasion. The cutting half of a smooth axe of sandstone and a rude but well-shaped axe-like implement made by chipping (fig. 7. Nos. 1 and 2) were found in the clay floor just beyond the step of the lower passage. The axe measured $3\frac{1}{2}$ inches long to the break by $2\frac{3}{4}$ inches wide across the sharp edge and $1\frac{1}{4}$ inches thick; the rude implement, which had rounded ends, measured $7\frac{3}{4}$ inches long by $3\frac{3}{8}$ inches at one end, tapering to 2 inches at the other and 1 inch thick.

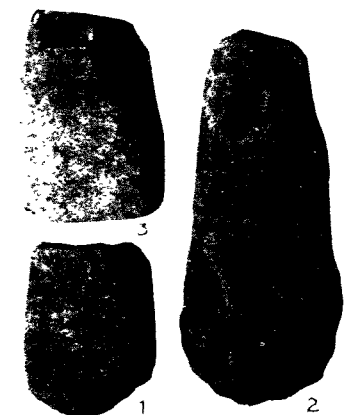


Fig. 7. From Cairn, Huntersquoy:
(1) Axe; (2) Axe-like implement.
From Cairn, Calf of Eday: (3) Axe.

In the area in front of the stumps of the uprights in the upper chamber, very small fragments of thin-walled pottery vessels were recovered from the floor, into which they had been trampled. Two of these pieces were decorated with a pattern of incised lines.¹ A few small flint flakes and pebbles, two of the bits calcined, were also picked up. From the surface near the edge of the cairn came two pot-lids of stone, each about 12 inches in diameter, and also a piece of burned pumice-stone. The broken axe and incised pottery alone may be assigned to the Stone Age.

CAIRN NEAR SANDYHILL SMITHY, EDAY.

The second cairn of the series has been erected on the high ground less than a quarter of a mile west-south-west of Sandyhill Smithy and about 160 yards north-east of the old U.P. Church, beside the public road. The ruins were enclosed in a fairly conspicuous mound, which was covered with peat and heather like the surrounding area. So far as I am aware no record of a former exploration exists. The estate factor recalled that the mound had been dug into many years ago, but the digging cannot have been extensive. There was a hollow in the top, which, however, seemed due to the collapse of the chamber roof

¹ See "Report on the Pottery" annexed.

and the subsequent growth of vegetation in conformity with the irregular surface of the ruins. In the hollow the broken heads of two upright stones protruded above the turf, but a third stone appearing similarly was not deeply embedded nor was it structurally connected with the cairn.

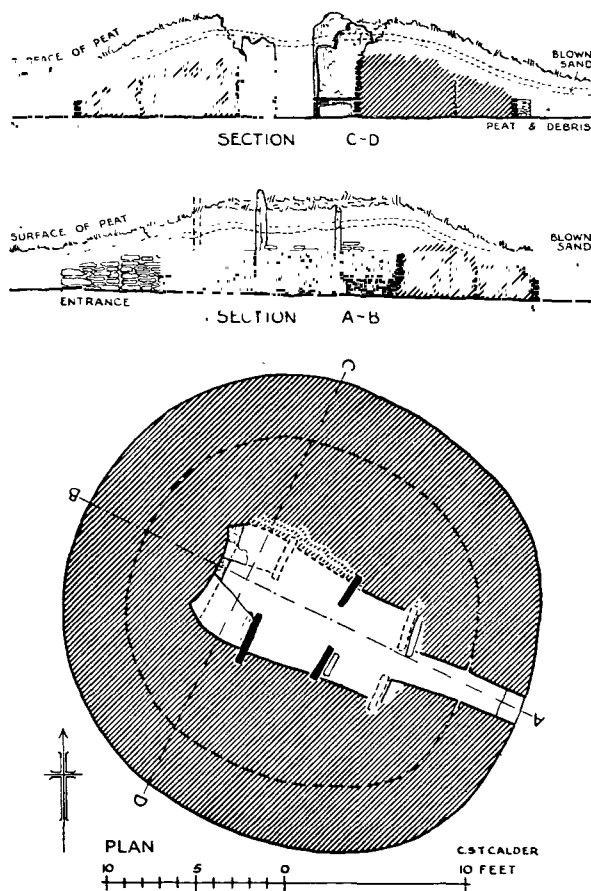


Fig. 8. Cairn near Sandyhill Smithy: Plan and Sections.

The cairn is circular on plan (fig. 8), a fact discovered by making a series of fourteen short trial trenches along the circumference at intervals sufficiently close together to establish the continuity of the outline. It is of small size, measuring only $26\frac{1}{2}$ feet in diameter, and it had been founded on the clay subsoil. The outer wall-face of rubble, horizontally laid and averaging 3 to 4 inches in each course, survives only to a height of 1 foot 2 inches above the foundations. A chamber with a passage

leading into one end of it from the east-south-east is contained within the structure. The passage was at least 7 feet 6 inches long, but this dimension may have been greater if the inner end, which is damaged, had been finished with upright slabs as indicated by the dotted lines on the plan. Its width is 1 foot 9 inches, but its height is not ascertainable as the roof-lintels have disappeared and its broken-down walls now rise only to a height of 2 feet. A large flag-stone forms a sill at the mouth, and at a distance of 3 feet 6 inches inwards from the opening a race-bond appears in each side wall, thus showing that the cairn has been built in a double thickness of walling. This method of building in two or more rings is a common one in Neolithic cairns.

The chamber is roughly oblong on plan. Its precise length depends on the interpretation of the damaged end of the passage, but it has been either 11 feet or 11 feet 6 inches, and it widens gradually from 5 feet 3 inches to 6 feet 6 inches towards the inner end. Presumably the roof consisted of slabs, all of which have been removed, and the rubble walls, built of flattish stones averaging $2\frac{1}{2}$ or 3 inches thick, have been much destroyed and reduced in height. They rise at most 3 feet 2 inches above the floor, which seemed to be made of natural clay.

Excluding the probable pair of stones at the entrance end four others, arranged in pairs, had subdivided the chamber into three compartments. Only three of the slabs survive but the fourth was determined by a groove in the floor where its base had rested. The slabs measured from 4 to 6 inches thick, and the tallest stood to a height of 5 feet 9 inches to its weathered top, above which level the walls had probably been carried well up before being roofed over. Communication between the compartments was obtained through a central gap between the inner edges of each pair of stones in alignment, the interval being 2 feet 3 inches in the case of the only two slabs left in this position.

The stalls, set one on either side of each compartment, vary in size from 3 feet 3 inches to 4 feet long, and from 1 foot 6 inches to 2 feet 4 inches wide according to the projection of the uprights. A stone shelf, 2 inches thick, occupies the whole area of the southern stall of the innermost compartment (fig. 9). It has been built into the wall at a height of 10 to 12 inches above the floor and the end next the upright is supported by a slab on edge with an "eek-stone" on its top. The corresponding northern stall has been furnished with a similar shelf. Shelves may have been contained in the other stalls but none now remains. Below the shelves, the inner end wall of the chamber is built straight across with masonry having a batter on the face as the courses ascend, but above the shelves the wall assumes a peculiar convex

outline on plan and the face is vertical. The wall-face of the entrance end and those of the northern stalls in the middle and inmost compartments, together with their dividing upright slab, had been torn out down to the very foundations. So complete a removal suggests that the destruction must have been done purposely, as there was no indication that the walls had caved in of themselves. This condition is probably due to a much later domestic occupation of the chamber, which was attested by a thin layer of compacted peaty earth, represent-

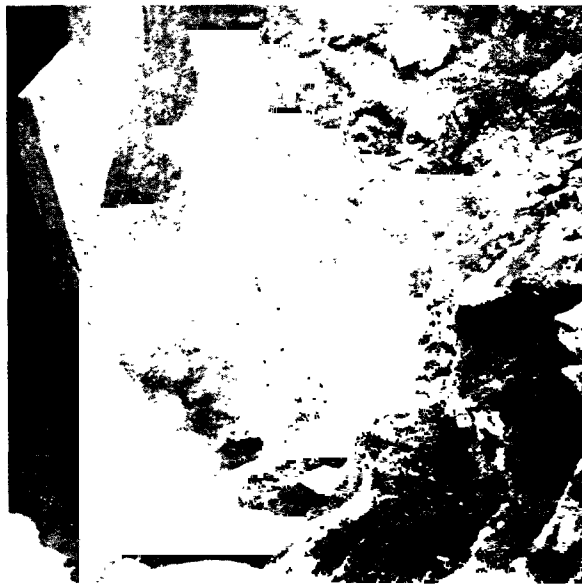


Fig. 9. Cairn near Sandyhill Smithy: Stall with Shelf in End Compartment.

ing a secondary floor. The accumulation rested on a layer of blown sand 10 or 12 inches above the original floor, and it was thickest in the central compartment. Through it were traces of burning and several flakes of flint were gathered from its surface. Above this level the chamber was filled with large stones and a few boulders. High up in the debris a not very large number of the stones had a clean appearance, free of earthy matter, as if they had been thrown back after a comparatively recent digging. This may well have been the case considering the attempted exploration previously mentioned. On top of the infilling there was a layer of peaty earth 12 inches thick under a layer of blown sand 4 or 5 inches thick, and above that again a second layer of peat, also 12 inches thick, extended to the surface. These layers were

regular over the mound and showed little disturbance even in the hollow where digging was said to have taken place. The sand-layer in the peat covered an extensive area of ground round about and probably Sandyhill derived its name from this occurrence a long time ago.

On debris at a height of 2 feet 3 inches above the floor of the passage and 4 feet 9 inches inwards from the mouth, a short length of masonry in two or three courses, about 2 feet long and 1 foot high, was all that remained of the face of a built wall of a later period.

The stalled type of chamber has generally been associated with a cairn of long shape, as in other Orkney examples in Rousay and Eday, which may contain as many as fourteen two-stalled compartments¹ but Sandyhill cairn is not the sole exception of round shape. As well as Huntersquoy, last described, there is one at Unstan² on the mainland of Orkney, one near Bigland in Rousay,³ and probably another on the Calf of Eday.⁴ The latter, however, does not stand in a cairn by itself but is wholly enclosed in the walling at one end of a long stalled cairn. Nor has its chamber been nearly so high as the others, but it has a definite connexion in being stalled and shelved.

Pottery from Sandyhill cairn⁵ was found crushed and embedded in the original clay floor of the central compartment. The fragments represented two different vessels, one plain and one decorated with incised ornamentation. Both are assignable to the Stone Age. Some fairly large pieces of charcoal (willow) were mixed with the potsherds and the clay round about was discoloured by soot and burning.

Four rude stone implements found in the infilling above the later floor-level consist of:—

A spatulate tool made by chipping, pointed at one end and straight at the other, which is slightly broken. It measures $7\frac{1}{8}$ inches long by $2\frac{7}{8}$ inches wide and $\frac{7}{8}$ inch thick.

An implement of roughly oval section, made by chipping and measuring $7\frac{1}{4}$ inches long by $2\frac{7}{8}$ inches wide and $1\frac{1}{4}$ inches at its thickest part.

A roughly cylindrical pounder worked at both ends, one of which is partly broken. It measures 7 inches long and $2\frac{1}{2}$ inches in diameter.

An oval-shaped pebble of quartzite, measuring $3\frac{5}{8}$ inches long by $2\frac{3}{4}$ inches wide and $1\frac{1}{2}$ inches thick. It has been abraded round the edges and on both sides, but particularly at one end by use as a hammer-

¹ *P.S.A.S.*, vol. lxx, p. 409, fig. 2.

² *Ibid.*, vol. xix, p. 341 ff.

³ In course of excavation by Walter G. Grant, Esq.

⁴ *P.S.A.S.*, vol. lxxi, p. 117, fig. 2, and p. 124, fig. 8.

⁵ See "Report on the Pottery" annexed.

stone. It is also rubbed flat and smooth on one side by use as a polisher.

Two roughly circular stones, probably used as pot-lids, were also found. They measure 4 and $5\frac{3}{8}$ inches in diameter respectively and each is $\frac{5}{8}$ inch thick.

With the exception of the polisher the implements are made of sandstone, and all may be tentatively assigned to the Early Iron Age.

CAIRN, CALF OF EDAY.

The third cairn (fig. 10) is said to have been excavated by Mr Robert J. Hebden, grandfather of the present proprietor, about the middle of last century. At any rate, at his request, what is presumably the same

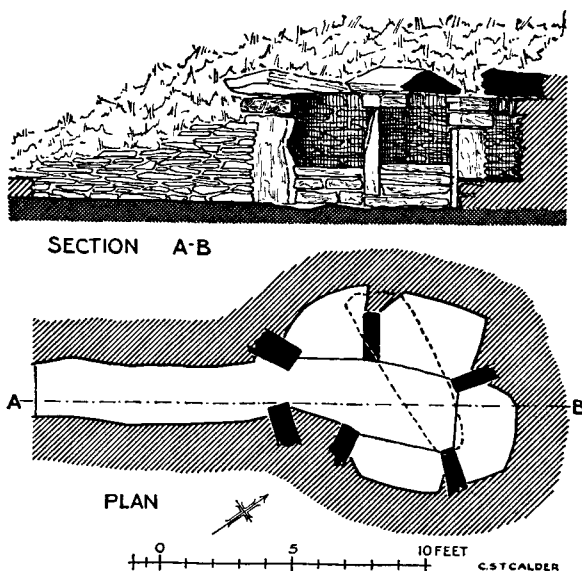


Fig. 10. Calf of Eday: Plan and Section.

monument was examined by Farrer in 1855¹ and again by Petrie in 1859² as no other structure which would correspond with their notes is known. According to the oldest inhabitant it remains in much the same condition as in their day, and consequently it is difficult to reconcile their descriptions with what they must have seen at the time. Each records that it was simply a hole in the ground covered over

¹ *P.S.A.S.*, vol. ii, part ii, pp. 156-7.

² *Proc. Orkney Ant. Soc.*, vol. v, p. 19.

by a single slab, whereas the chamber has a series of four recesses or cells in its upper part, which was evidently the only portion that had then been exposed. It is all the more surprising that these two authorities did not mention these recesses since they were at pains to plan and describe in detail a neighbouring cairn,¹ about 70 yards to the north-west (middle cairn, fig. 11), which contained very similar features. Farrer and Petrie, however, mistook the purpose of both of these monuments and classed them as Subterranean Houses, meaning Earth-Houses, by which name they are designated on the Ordnance Survey Map. Subsequently, Petrie² revised his opinion of the neighbouring cairn and called it a burial cairn, which it is.

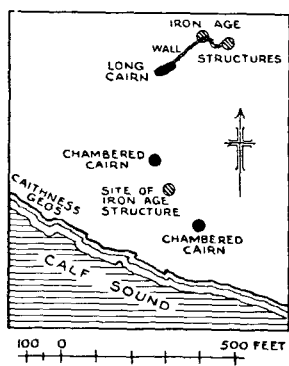


Fig. 11. Calf of Eday: Map of Monuments.

The cairn is the southmost of three Stone Age tombs in a group of monuments situated near the southern shore of the Calf of Eday (fig. 11), but neither Farrer nor Petrie was aware of the nature of the northmost, which was excavated and recorded only recently.³ No mound marks the spot nor is there any detail left as evidence that a superstructure had ever existed, and the interior is now open to the sky. What building remains, has been constructed below ground-level in an excavation scooped down to the natural rock in the face of a slight slope which is now covered

with peat and heather. When the chamber was approached it did look rather like a hole in the ground, but the entrance noted by Petrie was only a break through the walling near the top of the chamber above the inner end of the original passage. The latter was discovered after the digging commenced, and a depth of only 6 inches of soil had to be removed from the interior of the chamber to reach the bottoms of the recesses, which immediately made apparent the real purpose of the structure.

The passage, measuring 9 feet 8 inches long by 2 feet wide, leads into an end of the chamber from the south-west (fig. 12). No complete lintel survives but a height of 3 feet 3 inches is ascertainable from the broken ends of the innermost one remaining in the walls. From these ends to the front the sides of the passage gradually decrease in height to 1 foot, their tops having been destroyed. Two courses of stones,

¹ *Proc. Orkney Ant. Soc.*, vol. v, p. 19.

² *Archæological Journal*, vol. xx, p. 36; *P.S.A.S.*, vol. lxx, p. 226, fig. 8.

³ *P.S.A.S.*, vol. lxxi, pp. 115 ff.

rising 9 inches above the floor, seem to be all that is left of a wall-face across the outer end and suggest that access had been gained through some sort of a drop entrance. That these do not constitute a step in the floor as might be expected is a point deduced from the fact that the side walls terminate here and the natural clay rises behind as high as the stones themselves. At the inner end two opposed upright stones, built edgewise into the side walls with slight projection, separate the passage from the chamber and reduce the width of the opening to 1 foot 3 inches.

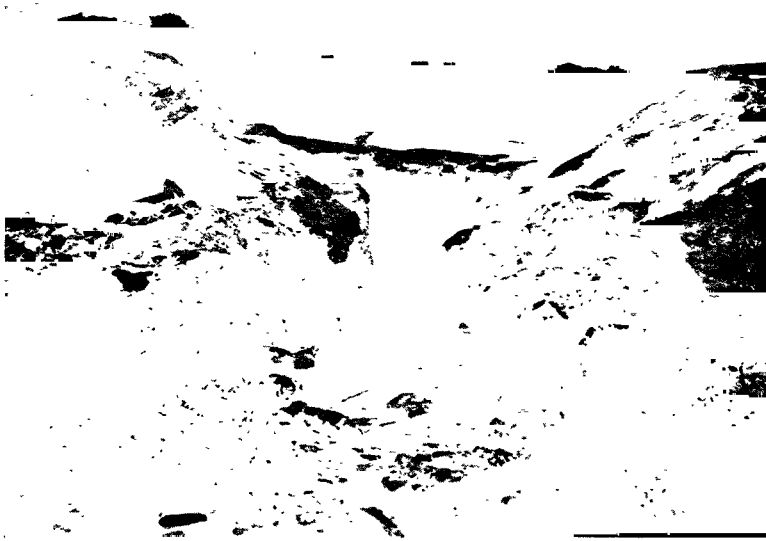


Fig. 12. Cairn, Calf of Eday: Entrance passage, looking into Chamber.

The chamber is 4 feet 3 inches high, and on plan shows a central space, much like an extension of the passage, which brings it into the corridor type of monument. It measures 6 feet 4 inches long and its width increases from about 2 feet behind the entrance to 3 feet towards the inner end. These measurements are taken at floor-level, but in the upper stage off which the recesses open the over-all dimensions are 8 feet 8 inches long by 7 feet 3 inches wide. The floor is rough and rocky, but a considerable quantity of fine clay spread over it suggests it was purposely levelled up with a layer of this material.

In the disposition of the recesses, two on the west side, one on the east, and one in the northern end (fig. 13) the lay-out corresponds to that of the four cells opening off a corridor in the neighbouring cairn. They are irregularly shaped on plan, the first on the left being like a

quadrant and the others more or less oblong. None is more than 3 feet 10 inches wide nor more than 2 feet 9 inches deep, and their height is from 2 feet 6 inches to 3 feet. Upright slabs, projecting edgewise from the back walling and reaching almost from the main floor to the roof, separate the recesses from each other. Between their tops and the roof the intervening space is filled by "eke-stones" which transmit the weight of the roof lintels to the uprights, all by this means being kept firmly in position. By virtue of the positions of its uprights the end



Fig. 13. Cairn, Calf of Eday: Interior of Chamber, showing recesses at north corner.

recess assumes a more closed-in and cell-like appearance than any of the others. The bottoms of the recesses are raised above the central floor-level by masonry built between the uprights to a height of 11 inches in the case of the lowest, on the east, and 1 foot 7½ inches in that of the highest, second from the entrance, on the west. It is probable that this masonry had carried a single slab forming the floor in each recess, but these have either disappeared or are broken. Three of the recesses still retain their heavy roofing slabs in alignment with the main roof and the fourth is partly covered by another which spans the chamber from side to side, as indicated by the dotted line on plan. The wall-head course in the end and in the eastern recess is built of larger stones than in the rest of the walling, which generally consists of thinnish slabs. In parts the walls are curvilinear on plan but there is no vertical corbelling.

THREE NEOLITHIC CHAMBERED CAIRNS IN ORKNEY. 213

Only one relic was obtained: the cutting part of a smooth axe of sandstone (fig. 7, No. 3) which was found embedded in the clay floor just inside the chamber. It measures $3\frac{1}{4}$ inches along the cutting edge and tapers to $2\frac{3}{8}$ inches at the break in a length of $4\frac{1}{4}$ inches, and it is $1\frac{3}{8}$ inch in thickness.

I wish to express my gratitude to Major Harry H. Hebden, M.C., for his hospitality and assistance in various ways during the course of the excavations. The Society is also indebted to him for his generosity in presenting many of the relics to the National Museum. I have to thank our Society, under whose auspices the work was carried out, and also Mr A. J. H. Edwards for his Report on the Pottery. It is impossible to single out specially for acknowledgment any one of the workmen, but their useful contribution as a team is much appreciated.

REPORT ON THE POTTERY. By A. J. H. EDWARDS, F.S.A.Scot.

From only two of the cairns excavated this year by Mr Calder has pottery been obtained, and that only in small quantity. Nevertheless the recovery of a Neolithic vessel new in shape and decoration to the Orkney area suggests that the Northern Isles may yet have a great deal to reveal about their early culture and its penetration to those remote parts from farther south or abroad.

In the clay floor of the upper chamber of the cairn at Huntersquoy, the broken pieces of two vessels were found. These consisted of:

1. Fragments of the basal portion of a buff-coloured round-bottomed Neolithic pot $\frac{3}{8}$ inch in thickness. The clay is coarse and, in parts, shows an admixture of crushed stone.
2. Rim fragment, $1\frac{1}{2}$ inch by $\frac{3}{4}$ inch and $\frac{3}{16}$ inch in thickness, of a vessel of hard reddish brown coloured ware (fig. 14, No. 2). The top of the rim is rounded, and immediately under the lip is an incised line with oblique lines depending from it, all incised with a pointed tool. The fragment is misshapen so that the diameter of the urn cannot be obtained even approximately. Probably Neolithic.

From the floor of the lower chamber:

3. Portion of the base and wall of a flat-bottomed vessel of dark red coloured ware, the base having a diameter of 4 inches.

The pottery from the cairn near Sandyhill Smithy consists of fragments of two Neolithic vessels found embedded in the clay floor of the



Fig. 14. Pottery fragments: (2) from cairn, Huntersquoy; (1 and 3) from cairn near Sandyhill Smithy. (†).

central compartment. Both had been so badly broken that reconstruction was not possible.

1. Rim and wall fragment (fig. 14, No. 3) of a non-carinated bowl

of a thin hard ware, the colour of which varies from dark brown to grey. The paste is fine and "corky" in appearance. The outer surface near the rim has a sooty incrustation adhering to it, and portions of the vessel are now so brittle and crumbly that it is evident that the urn has been in a fire and exposed to great heat.

The vessel has been about $8\frac{3}{4}$ inches in diameter at the mouth and about 4 inches in height. It has an everted rolled rim $\frac{5}{8}$ inch in breadth, slightly undercut on the outside, the

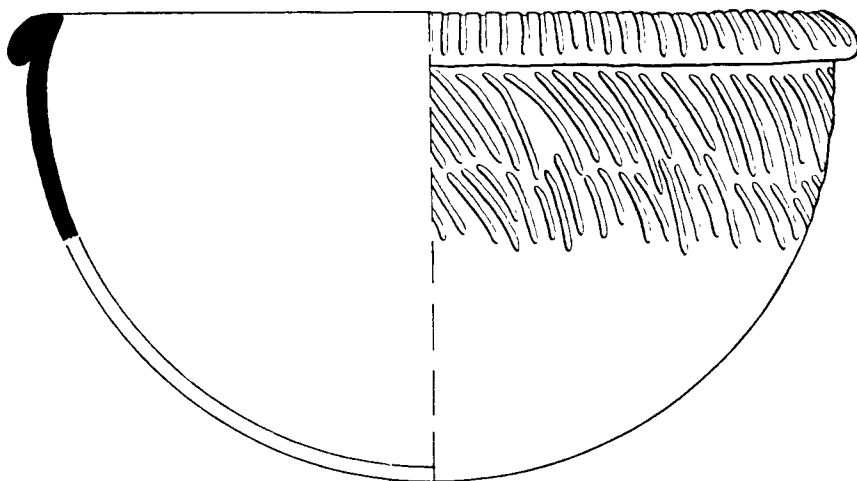


Fig. 15. Suggested reconstruction of vessel from cairn near Sandyhill Smithy. ($\frac{1}{2}$).

upper portion being decorated with transverse shallow grooves. Immediately below the rim the wall of the vessel, which is $\frac{1}{4}$ inch in thickness, is ornamented with roughly scored oblique lines running from left to right, made with a blunt point, the decoration being more or less in the Beacharra style¹ and very similar to that on a bowl from Whitehawk Neolithic Camp, near Brighton.² The remainder of the vessel is plain, and a sufficient number of fragments have been pieced together to show that the bottom was round. The pot is specially interesting, inasmuch as no similar vessel has yet been recovered from any of the cairns in Orkney, and a section (fig. 15) of a suggested reconstruction shows

¹ *Proc. Soc. Ant. Scot.*, vol. lxiii. p. 51, fig. 24.

² *Sussex Arch. Collections*, vol. lxxi. p. 70, fig. 21.

that in shape it is probably a derivative of one of the Yorkshire bowls.¹

2. Rim and wall fragment of an urn with an almost vertical wall ² (fig. 14, No. 1. and fig. 16). The ware is coarse, "corky" in

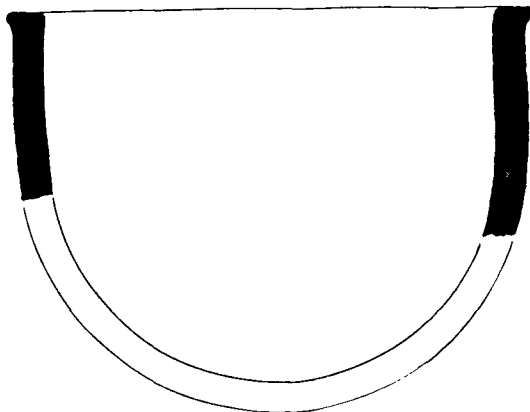


Fig. 16. Suggested reconstruction of Urn from cairn near Sandyhill Smithy. ($\frac{1}{2}$).

appearance and brown in colour. The vessel has had an external diameter of 6 inches at the mouth with a flat lip $\frac{7}{16}$ inch in breadth projecting slightly outwards. The wall is $\frac{13}{32}$ inch in thickness. A small fragment of the bottom shows that the base has been rounded. This vessel, like the previous one, shows traces of having been in a fire.

¹ *Proc. Prehistoric Society*, July–December 1937, p. 191, fig. 8.

² *Proc. Soc. Ant. Scot.*, vol. lxiii, p. 77.

THREE FRAGMENTS OF A SCULPTURED CROSS OF ANGLIAN
TYPE NOW PRESERVED IN ABERCORN CHURCH, WEST
LOTHIAN. BY CHARLES S. T. CALDER, A.R.I.A.S.,
F.S.A.Scot.

In 1934 two large fragments of the shaft of a sculptured cross were added to the collection of similar relics already preserved in a room off the vestry at Abercorn Church. Prior to that date these had been utilised as cope-stones in the parapet of the bridge over the Midhope Burn¹ in front of the entrance gates to the sixteenth-century castle of that name which lies half a mile south-west of the church. Their removal to their present quarters probably brings the stones nearer home to the original site which the cross had graced in the precincts of the early monastic settlement there—the seat of the Anglian Bishop Trumwin towards the end of the eighth century.²

When in the bridge, carving was to be seen only on one side of each stone, the ornamentation on the other two exposed sides having been destroyed in the dressing-down to suit the requirements of the coping. The under sides, however, which had been covered up in the mortar of the joints, retained well-preserved panels cut in relief with rich interlaced and zoomorphic designs. The good state of the carving on these seems to imply that the ornamentation on the other faces had likewise been in good condition before they were mutilated. On this account it is all the more distressing to contemplate the spirit of vandalism in the drastic treatment of what has undoubtedly been an admirable piece of work.

That the cross had been a handsome one will be seen from the photographs (fig. 1), and from the conjectural restoration which it has been possible to make from a study of the details that fortunately remain (fig. 2). In building up the finished outline advantage has been taken of the opportunity to record a third fragment of sculpture which also lies with the rest at the church. It represents the boss of a cross-head, and although it may or may not actually belong to the shaft that is under review, its inclusion answers the purpose as it may be appropriately ascribed to a sculptured cross of similar class and period.

¹ *Inventory of Ancient and Historical Monuments, Midlothian and Westlothian*, p. 188 (No. 285); facing p. 180, fig. 211.

² W. Douglas Simpson, *The Celtic Church in Scotland*, p. 42.



Fig. 1. Front and side views of fragments of Shaft and obverse and reverse of Boss of Cross-head.

The fragments have been inserted in the drawing (fig. 2) in the relative positions they occupied originally, and the combined height of shaft and head as reconstructed shows that the cross has stood at least 14 feet high. The shaft has tapered approximately from 16 by 12 inches at the base to 11 by 9 inches at the top.

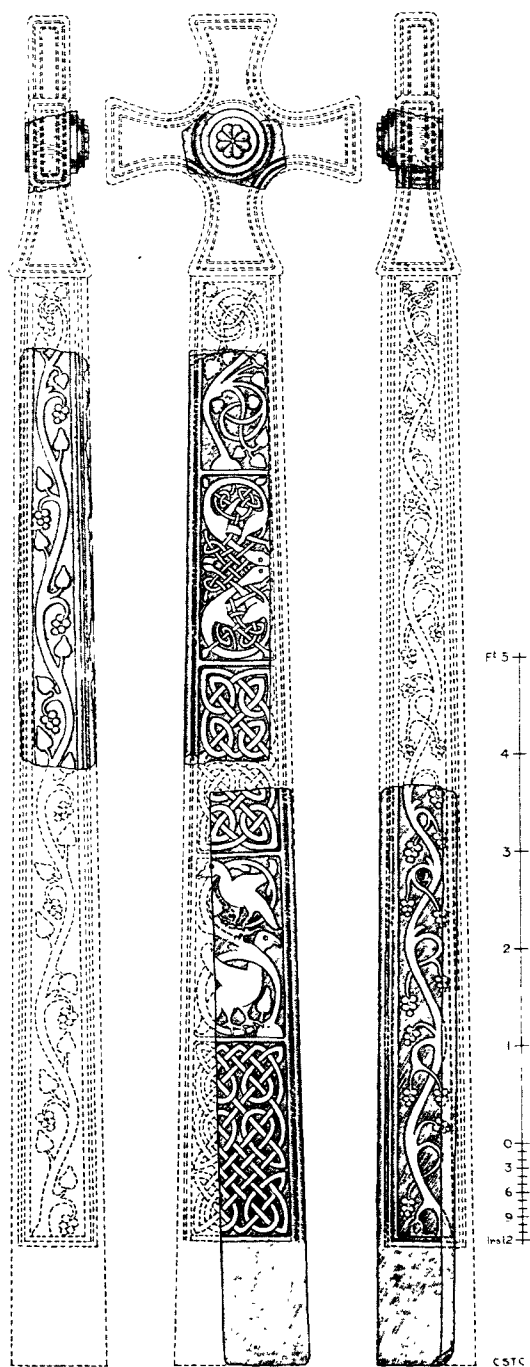


Fig. 2.—Front and side views of Cross restored.

It so happens that the panels which remain on the two portions of the shaft have once adorned the same face of the cross so that an interlaced pattern common to both can be connected up with great certainty. Altogether there are five imperfect panels running end to end along this face, and their well-executed enrichment stands out boldly. Each has measured almost 2 feet in length, and the lowest begins above a plain base 1 foot 3 inches high. It is filled with an interlaced design composed of two interwoven ribbons, as detailed in fig. 3. The panel above symbolises the "Tree of Life"¹ in a vine, which branches into two open spiral scrolls, one in the upper and one in the lower half of the field. Each of these scrolls is tipped with a leaf, and within each convolution a relatively large bird is carved. The birds, which appear to have hooked beaks, are perched to face in opposite directions, and are displayed with outspread wings. A simple interlacing of only one ribbon appears in the broken mid-panel which follows. The most intricate and elaborate design of all is carved in the panel above that again. It is zoomorphic and contains a fret of some complexity in the middle. In the upper and lower halves of the field respectively are the very attenuated bodies of two whippet-like animals with limbs and tails intertwined. The limbs and tails are further complicated by the addition of two interwoven ribbons, distinguished from the animals drawn in black in the detail in fig. 3 by being left white. Actually these ribbons may represent extended lappets, as one end of each starts from the back of an animal's head. A panel having a great resemblance to the above is to be found on the fragment of a cross-shaft which originally came from Aberlady, but is now preserved in Carlowrie House, Midlothian.² Two animals, identical in appearance with those at Abercorn, are displayed also with intertwined limbs. The style and execution of both panels is so remarkably similar that not only do they seem to belong to the same school, but it is probable that the work has been done by the hand of the same carver. Also the intertwined animals in a panel on the fragment of a cross from Lindisfarne are markedly similar to those just described, while there is a distinct resemblance in the detail of the interlaced work to that of the Abercorn shaft in another panel of the same cross.³ The symbolic vine is the sole feature of the topmost panel, and instead of birds in its two convolutions, both are filled with subsidiary branches interlaced and tipped with leaves or fruit.

¹ Collingwood, *Northumbrian Crosses of the Pre-Norman Age*, p. 39, chap. vi.

² Romilly Allen, *Early Christian Monuments of Scotland*, pt. iii, p. 428, fig. 448A, and *Inventory of Ancient and Historical Monuments, Midlothian and Westlothian*, p. 213 (No. 350); facing p. 229, fig. 288, front.

³ *Archæologia*, vol. lxxiv., facing p. 265, pl. lii., figs. 1 and 2 of cross-shaft ii.

The panels have been separated lengthwise by a single bead moulding, and their sides have been framed by roll-and-bead mouldings running along each edge of the shaft. On the existing edge of the front the roll-and-bead moulding measures $1\frac{1}{2}$ inch wide, but on the edges of the side faces the moulding measures $2\frac{1}{2}$ inches in width. The

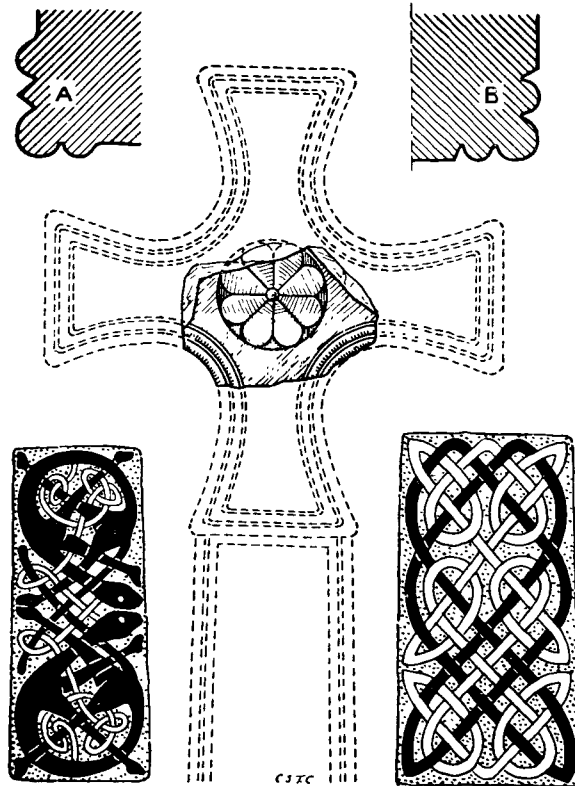


Fig. 3. Reverse of Boss of Cross-head; Zoomorphic and Interlaced panels. A. marginal moulding of Shaft; B. marginal moulding of Cross-head.

increase is due to an extra V-shaped fillet which is interposed between the angle roll and the bead as detailed at **A** on fig. 3.

On each of the side faces a long narrow panel, bearing a sinuous vine-scroll along the whole length of its field, has been enclosed by the larger moulding, and fortunately the patterns of both scrolls have been preserved, one on each fragment. These, however, have suffered badly from exposure, and there is now some uncertainty as to whether the

wasted tips of the branches terminate in fruit or foliage. In the drawing (fig. 2) the design on one side shows all the tips bearing bunches of grapes, and on the other they are depicted with a combination of alternate fruit cluster and leaf, but both details are typical.

The fragment of the cross-head, which is 5 inches in thickness, is adorned on the obverse with a circular boss, projecting $2\frac{1}{2}$ inches from a plain surface in three stages of decreasing rings or discs, measuring respectively 8, $5\frac{5}{8}$, and 4 inches in diameter (figs. 1 and 2). The boss is contained within an incised ring, $9\frac{1}{2}$ inches in diameter, and the uppermost disc has been cut and incised to the shape of a conventional eight-petalled flower. A flatter single disc, $7\frac{1}{2}$ inches in diameter with a projection of only $\frac{3}{8}$ of an inch above the face, occupies the central position on the reverse (figs. 1 and 3). It is also carved with a similar ornament, which is a device frequently used on Anglian cross-heads, but with a varying number of petals. The crosses with similar petalled decoration illustrated by Collingwood range, in his opinion, from dates in the eighth-ninth century to the middle of the eleventh.¹

At the intersections of the arms the margins of each face have been worked with a roll-and-bead moulding (fig. 3) which has evidently been carried along all the edges of the head. The intersections are hollowed, and the arc so formed in each "armpit" was a controlling factor in the restoration of the design. It seemed best suited to fit the "pectoral" ² type that is shown. Not solely on that account, however, has this kind of head been chosen, but also because it is typically Northumbrian in style, "all Anglian crosses that have any heads left" being "free-armed" with "rounded armpits."³ Other variations may easily be adapted to the arc, and a probable alternative design is that of the "spatulate" head with double-curving arms like those of the Ruthwell Cross or the one at Rothbury.⁴

All the details of the fragments correspond with the Anglian ornamentation on similar Northumbrian crosses, which series seems to begin about A.D. 670, the date suggested by the inscription on the Bewcastle Cross.⁵ Clapham, writing of the Abercorn and Aberlady examples already known, states that they "should, in all probability, date from the short episode of the Anglian See at Abercorn (681-685).⁶ But there is also the probability that this cross had been carved later, as a strong

¹ *Northumbrian Crosses*, p. 54, fig. 68; p. 58, fig. 72; p. 82, fig. 99; p. 176, fig. 218.

² *Ibid.*, p. 82 and fig. 99, a to f.

³ *Ibid.*, p. 82.

⁴ *Ibid.*, pp. 83-84, fig. 101; p. 77, fig. 95.

⁵ Clapham, *English Romanesque Architecture before the Conquest*, p. 68.

⁶ *Ibid.*, p. 64.

Northumbrian influence may well have survived Bishop Trumwin's short reign. Besides, Clapham's date places the Abercorn cross he describes in a time very nearly at the beginning of the art, whereas the sculpture detailed here, compared with other carvings, appears to exhibit a more advanced stage of development. On the other hand, Collingwood¹ attributes the same Abercorn shaft to the tenth century, while his illustration of Waberthwaite, "which may be ninth century or later."² shows a vine-scroll of much the same style as the Abercorn shaft now being described.

Apparently the opinions quoted above have not been shared by either Baldwin Brown or Reginald A. Smith. The former in alluding to Abercorn remarks "that there is accomplished Anglian work dating probably to the VIII" (century).³ The latter states in general that "scrolls springing from a central stem, the sprawling reptile, winged creature (bird or dragon) with interlacing, pair of dragons confronted and interlaced and a nondescript animal with interlacing" were "suggested also by their occurrence on the Brunswick casket" as "stock figures of the eighth century."⁴

The diversity of authoritative opinion as to the period of the Abercorn work already recorded leaves more speculative the conclusion to be reached in regard to the dating of the fragments now being dealt with. All things considered, they seem to belong to an earlier rather than to a later phase of the art, and may, with most probability, be ascribed to the first half of the eighth century.

I desire to thank the Rev. Johnstone Oliphant, B.D., for permission to photograph and record the fragments, and also for his ready assistance during my visit.

¹ *Northumbrian Crosses*, pp. 182, 185.

² *Ibid.*, p. 112, fig. 134 c.

³ Baldwin Brown, *The Arts in Early England*, vol. vi. pt. ii. p. 209.

⁴ *Archæologia*, vol. lxxiv. p. 247.

III.

THE EDINBURGH TOUCHPLATES: SOME NEW LIGHT ON THEIR ORIGIN AND PURPOSE. BY LT.-COL. J. S. BISSET, F.S.A.Scot., F.G.S.EDIN.

The two plates of pewter known as the "Edinburgh Touchplates" were presented to the Society of Antiquaries of Scotland in 1870 in a small oaken chest, which also contained, amongst other articles to be described later, a note by the donor stating that the chest had been preserved in a gipsy family before coming into his possession and was known as the Charter Chest of the celebrated Border gipsy, Johnny Faa and his descendants. The plates, one of which is illustrated (fig. 1), are some $12\frac{1}{2}$ inches long by $4\frac{1}{2}$ inches broad, and are stamped with marks (usually including a castle and a date) which we now know to be the marks or "touches" of the members of the Edinburgh Pewterers craft. The note states that these plates were the Charter which constituted the gipsies' warrant to travel and trade throughout the country, and that they were stamped periodically by the proper authority. This fanciful legend persisted for years in spite of the fact that Dr J. A. Smith, in a paper read before the Society soon after the presentation of the plates, put forward the more reasonable solution that they were the "official" plates of the Edinburgh pewterers and were a record of the craftsmen's marks. Subsequent investigation proved this to be the case.

The chest (fig. 2) is some 16 inches long, $7\frac{1}{2}$ inches broad, and 6 inches in height. It is perfectly plain, except for the deeply bevelled moulding around the edge of the lid, and the workmanship is rough, but it is lavishly decorated with ornamental iron strappings and lock escutcheons, all of which are now badly corroded and in places have actually fallen apart. There is no reason to doubt that it is an old "commoun box" of the Edinburgh pewterers, though probably not the identical box of 1562 referred to below.

In the course of a recent search through the old Burgh Records I came on evidence which has led me to believe that the real and primary purpose of these plates has not hitherto been realised.

An Act of the Edinburgh Burgh Council of the 11th December 1562, after condemning the quality of the metal being used by the

pewterers of the town, ordaining that pewterers should assay the work of their fellow-craftsmen, and detailing the method of testing to be employed, continues: "and in cais questioun or discorde mycht ryis amangis the saidis persons or thair successouris anent the trying and marking of the said weschell [*i.e.* the vessel under assay] the said pewdereris has instantlie at the making heir of [to] put in thair commoun box of the pudermaker craft ane assay of tyn markit with all thair markis and according thairto in tyme cuming the tyn weschell to be maid. . . ." This "assay of tyn markit with all thair markis" bears a striking resemblance to the Edinburgh Touchplates. Further, at a Convention of the Royal Burghs on the 7th July 1614 there appeared "Thomas Weir peuderer, deacone of the hammermen within the burgh of Edinburgh" complaining of the poor quality of the metal being used by pewterers throughout the Kingdom. The Convention "ordeans the said Thomas Weir to delyver to ilk burgh ane assay of tyne markit with the town's mark of Edinburgh (if he be requyrit thairto be thame) to be keipit by the saids burghs and according thairto in tyme heirafter the haill tyne veschells to be maid . . . and ilk peuderer to put thair stamp thairon that he intends to vse all the tyme of his lyfe, quhilk stamp sall beir the mark of thair toun together with the zeir [year] of God of the making of the said stamp." This same Thomas Weir had appeared before the Burgh Council in the preceding month sup-

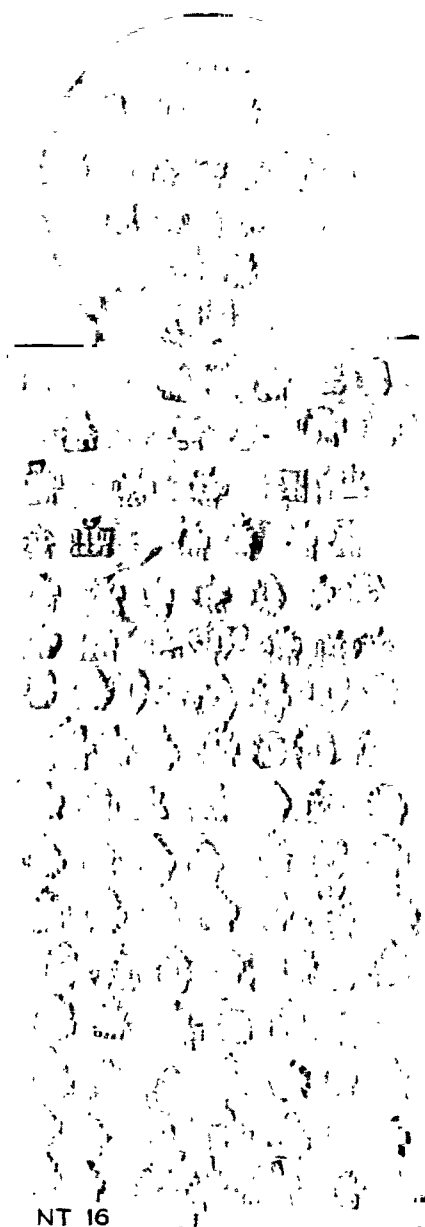


Fig. 1. Touchplate of the Edinburgh Pewterers Craft. ($\frac{1}{2}$).

plicating for the "reforming of the fraud and deceit usit be the hail pewderers of the said burgh of *Edinburgh* in mixtioun of thair pewder veschell with leid or utherwayis making the same altogedder of leid" and requesting that these be made to conform to the Act of the 11th December 1562—*v.* above. The Council instructed their commissioners to the forthcoming Convention of Burghs to support the deacon's appeal there.

In view of the above it seems clear that the Edinburgh Touchplates are not mere registers of the craftsmen's touches, but are samples of



Fig. 2. "Johnny Faa's Charter Chest." ($\frac{1}{4}$).

pewter of approved quality, on which each master pewterer has stamped his mark as an acknowledgment of his obligation to employ pewter of at least that fineness in making his wares. It should be borne in mind that the Act of the Covention of 1614 was not the origin of the Edinburgh plates but shows the Convention following its normal custom of bringing the other burghs in line with the methods and practice in commerce and industry already in use in the chief city.

It is probable that an earlier plate than those we have was prepared in accordance with the Act of 1562 and was stamped with the touches of all the master pewterers then working in the burgh. This plate would perhaps be little larger than would comfortably accommodate these touches, and when it was completely covered with marks a new larger plate would be taken into use—perhaps about 1588, the date

of freemanship of John Rebate to whom the first touch on the plates is believed to belong. Or, again, the Act of 1562 may have been forgotten or ignored after a short time—as many another has been—and a new plate have been prepared about 1600, in which year the original measure was re-enacted. It is significant that three of the first nine touches include the date 1600 in their design, the other six bearing no date. In either case the original plate would probably be destroyed when all the craftsmen whose touches were recorded on it had died.

Further support for this theory is derived from the fact that the chest also contains two fragments of ordinary domestic plates, both bearing the English mark of good quality pewtèr, the Rose. One of these is part of a “triple-reeded” plate of the type made about 1670–1700. The other is from an early 18th century “single-reeded” plate. It is probable that these also are samples placed in the common box for the guidance of the craftsmen at some time subsequent to 1641, when an Act of the Scottish Parliament ordained that pewterers’ work shall be “of the finest pewter marked with the Rose in England.” A similar Act was passed in 1663.

There were also in the chest a small rectangular plate of pewter bearing the “castle” touches of two craftsmen—TA, 1669, and RS, 1671—whose names are not in the records of the Craft, and a small cup $1\frac{3}{4}$ inch high which has since been lost. No particular significance appears to attach to these.

The first touch on the Touchplates consists of two stamps, one bearing the castle only, and the other a cross saltire and a vertical line with the initials I.R. on either side. All but one of the first twelve touches are of this double form. Collectors have been puzzled by this apparent use of two touches by these early pewterers. An entry in the Burgh Records of the 16th February 1554–55 gives a clue to the solution of the problem. This reads:—

“Compeared John Rynd John Weir John Watsoun and James Cranstoun pewterers and oblist thame in tyme cuming to mak thair stoppis pyntis and chopins to all our soverane ladeis liegeis of the just mesour of the maner following viz. that ilk mesour haif ane tapoun an inche beneith the lip and the stop to be just mesour to the tapoun and on the uter side of the tawpoun that the townis mark be theron and the makaris mark besyde it.”

Here we see certain selected pewterers, if not indeed all the master pewterers then in the burgh, authorised to put the town’s mark on their

measures as well as their private touch. This entry is also of value as showing with especial clearness the town's mark performing its function of guarantee of correct measure. Not only is it to be stamped on the outside of the measure but exactly over the spot occupied on the inside by the tapoun—later and better known as the "plouk." This was no doubt intended as a safeguard against the subsequent alteration or removal of the latter by an unscrupulous retailer or customer.

An Act of the Burgh Council of the 26th February 1573-74 carries the matter a stage further by giving the maker's name a separate and distinct function. This Act and an almost identical Act of 1586, after ordaining that quarts, etc., shall be of just measure, continues: "and that every mesour have the townys merk upoun the lyp, at the uter side, *with the craftismannis markis*, makaris thairof, besyde the samyn *for the fynes* [fineness] *of his stuf*. . . ." Clearly here the craftsman's mark is to serve as a guarantee of the good quality of the metal used, while the town's mark, the castle, stands for just measure as it had for centuries.

Why these early craftsmen considered it necessary to put both these marks on the Touchplates is not clear, but, as each seems to have had his own private version of the castle stamp, it may have been due to a misreading of the "markit with *all* thair markis" in the Act of 1562. Or is it the correct reading?

After a few years a more convenient plan was evolved, in which the castle and the craftsman's mark (his initials) were combined in one stamp, along with a date—generally that of the craftsman's becoming a freeman or a master. This form, with rare exceptions, persisted to the end. In spite of the difference in form the significance remained the same. This mark approximates very closely to the hall-marks on old Edinburgh silver, where we find side by side the castle, the craftsmen's initials, the date letter, and, for greater security in the case of the more valuable metal, the initials of the Deacon, who was always responsible for the quality of the materials and workmanship of the members of his craft. Each craftsman probably still had his separate private touch, but it was no longer necessary to put it on the Touchplates. Indeed, by the end of the seventeenth century, as marks became larger and more elaborate, this would have been manifestly undesirable. This latter touch he seems to have used as his guarantee of quality on all his wares except those which were required by law to bear also the town's mark of just measure, *i.e.* measures, etc., used in trade. Amongst these was the tappit hen, which might well have been

expressly designed for "sendand for wyne to ony taverne," so well does its narrow neck with low-set Plimsoll mark, the "plouk," fit it for the rough journey across the old Edinburgh streets, and, be it noted, it was the customer's own measure that must be "set to the punscheoun heid," and therefore must bear the town's mark. On these measures the craftsman placed his castle touch only, as adequately fulfilling both functions.

The foregoing appears to afford a satisfactory explanation of the absence of a Dean of Guild's mark on Edinburgh measures earlier than the nineteenth century. It must be remembered that, though the last touch on the Touchplates only bears the date 1764, there is no reason to doubt that several of the latest touches would still be in use for many years after that date. Andrew Kinnear and John Gardiner, for example, were still in business in 1803, and, though they had in addition private marks of the more elaborate type favoured by English pewterers, they would continue to use the castle touches on their measures. This is confirmed by a remarkable entry in the Burgh Records of the 4th April 1798. In this is recorded at length a Memorial addressed by Robt. Wemyss, Dean of Guild Officer, to the Dean of Guild of that year. This officer complains that, although by an Act of the Burgh Council of the 3rd April 1584, confirmed by Act of Parliament in 1593, the Dean of Guild and his Court were charged with the overseeing and reforming of Weights and Measures, and that by right and by the custom of other burghs these duties belonged to himself as Officer of the Court, and that he therefore should have charge of the "legal stamps and standard measures," in point of fact these had "somehow or other been resigned to the different tradesmen employed in the making of weights and measures," with injury to the public and loss of emoluments to himself. The Burgh Council, on the advice of the Dean of Guild and his Court, ordered that the stamps and standard measures be withdrawn and kept at the Dean of Guild Court, and that *copies* of the standard measures be issued to the tradesmen, subject to their inspection by the Dean of Guild Court at their pleasure, and that no person be allowed to put the Dean of Guild's stamp on any piece of work except the Dean of Guild Officer.

The above was apparently not given full effect until September 1801, when the following order was issued by the Dean of Guild and published in the *Edinburgh Advertiser* of the 18th-22nd September: —

By ORDER of the LORD DEAN of GUILD
of EDINBURGH

WEIGHTS AND MEASURES

Dean of Guild's Office, Parliament Square, 16th Sept. 1801

As it is intended that a survey of all WEIGHTS DRY and LIQUID MEASURES in use in the city and liberties shall shortly take place—NOTICE is hereby given to all concerned that they may have their weights and measures stamped by applying to the Dean of Guild Officer between and the 15th day of October next.

It being the Dean of Guild's intention to have all Weights & Measures in future stamped at THIS OFFICE ONLY, all tradesmen and others are prohibited and discharged from using his stamps for that purpose and if any Weights & Measures are found in the possession of any dealer or other person making use of the same after the said 15th day of October next, they will not only be forfeited but every such person severely fined or otherwise punished.

There can be little doubt that the stamps to which the Dean of Guild's order refers are the old castle touches. As mentioned above, at least two of the craftsmen whose touches are found on the Touch-plates were still working in 1803—two years subsequent to the issue of the Dean's order, and as there do not appear to have been more than half-a-dozen master pewterers in the city at that time, it is quite possible that these two long-established businesses, with their staff of freemen employees, were responsible for half the output of pewterware in Edinburgh in 1801. The exact meaning of the last portion of the order is not clear, but if strictly and literally enforced by an energetic officer it may well have resulted in the destruction of most of the pewter measures bearing the castle touch that were in use at the time and thus account for their rarity to-day.

The earliest mark I have been able to trace, which is definitely associated with an Edinburgh Dean of Guild, is that on a mutchkin baluster measure in the collection of Mr Gilbert Hole. This is the mark of James Jackson, who held office from Michaelmas 1799 to Michaelmas 1801, and was therefore the Dean responsible for the above-quoted order. This, I think, can hardly be a coincidence. His mark is a

II

simple DG. This was no doubt devised as being distinctive from the

old marks and also as being a mark which craftsmen were less likely to use without authority or embody in their own touches.

The mark of the next Dean, Thomas Henderson— $\frac{TH}{DG}$, is to be found on another mutchkin baluster measure belonging to Dr A. J. Young, at present in the Royal Scottish Museum, and the mark apparently continued in this simple form down to 1820 when Alex. Smellie

is still using a plain $\frac{AS}{DG}$. These marks, late as they are, are remarkably

rare. Perhaps later Dean of Guild Officers were not so enthusiastic about their job as Robert Wemyss. In 1816 they had been replaced by a specially appointed Superintendent of Weights and Measures, James Welsh, whom we find in the Burgh Records making application for an additional allowance of 4s. The Council, however, ordered that his duties should revert to the Dean of Guild Officer. In 1821 Henry Hardie, now known as Inspector of Weights and Measures, is also applying for an increase of allowance. In this case the Burgh Council not only refused the application but told Hardie that unless he performed his duties more efficiently his present allowance would be discontinued.

At the end of this year (1821) the castle reappears in the mark of John Turnbull. This is of the well-known four-lobed type with the crown, castle, and sovereign's initials occupying the four lobes. It is accompanied by his initials only. Turnbull's mark is of particular interest as the three towers of the castle have the tall pointed roofs or spires found on many of the old burgh seals, in place of the usual embattled parapets. Turnbull seems to have been the first Dean to bring into use the Imperial Standard Weights and Measures, though I have been unable to find anything in the Burgh Records or elsewhere to account for a change at this time. The Act of Parliament which replaced the old Scottish Standards by the Imperial ones was not passed until 1824 and did not come into force until 1826. All the marks of this Dean that I have been able to find are on measures of Imperial capacity, while those of his predecessor, Alex. Smellie, are on measures of the old capacities. Incidentally there was a later Dean with the same initials as John Turnbull. His mark is frequently met with, but Turnbull's is readily distinguished by the pointed towers of the castle.

Subsequent Deans used the same type of mark except that the castles have plain embattled towers and the letters DG are again added below the Dean's initials. In this form the mark continued till 1835 when the duty finally passed out of the hands of the Dean of Guild.

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MONDAY, 11th April 1938.

THE HON. LORD ST VIGEANS, LL.D., Vice-President,
in the Chair.

A Ballot having been taken, the following Candidates were elected Fellows:—

JOHN JOHNSTON, M.B., Ch.B., 7 Albyn Place, Aberdeen.

JAMES MATHESON M'BAIN, Solicitor, Rosemount, Arbroath.

Rev. JOHN H. MACKENZIE, The Manse, Carfin, Lanarkshire.

Rev. RONALD SELBY WRIGHT, M.A., The Manse of the Canongate, Edinburgh. 8.

Before proceeding with the Business, it was resolved:—

That the Secretaries be instructed to put on record the Society's sense of the great loss which Scottish archæology has sustained through the death of Dr John Graham Callander. His association with the Society and with the National Museum has been long and intimate. Elected a Fellow in 1898, he became an Honorary Secretary in 1913. Six years later he was appointed Director of the Museum and Assistant Secretary. From boyhood he had been an assiduous collector of relics of the ages of stone and bronze, many of them detected by his own observant eye in the fields of the Aberdeenshire farm on which he was brought up. The education thus received proved an invaluable training for what was destined to be his life's work, and was largely instrumental in developing the sureness of judgment in matters archæological for which he was distinguished. It was characteristic that his first contribution to the Society's *Proceedings* should have been a "Notice of a Collection of Perforated Stone Objects from the Garioch, Aberdeenshire." That appeared in 1903, and was the forerunner of a long series of papers, some of them of outstanding importance. Each successive volume that has since been published has contained at least one article from his pen. These range from more or less brief descriptions of new acquisitions or chance discoveries to detailed accounts of extensive excavations and comprehensive surveys of some particular class of objects found in Scotland, such as Neolithic

pottery and Bronze Age hoards. It was perhaps in the surveys that he was seen at his best, for his knowledge of the Scottish material, and not only of that preserved in the National Museum, was unique, and therein lay his strength. During his tenure of the office of Director he had the satisfaction of seeing many large and valuable additions made to the collections under his charge, his devotion to which fell little short of affection. He will long be missed from the meetings of the Society and also from the rooms of the Museum.

ACQUIRED THROUGH THE KING'S AND LORD TREASURER'S
REMEMBRANCE:—

A Hoard of Silver Coins found near Bridge of Don, Aberdeen.
(See Communication by Robert Kerr, F.S.A.Scot., Volume LXXIII.)

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By HIS MAJESTY'S GOVERNMENT:—

Calendar of State Papers. Colonial Series, America and West Indies, 1730. London, 1937.

Calendar of the Close Rolls. Henry VI. Vol. IV., 1441–1447. London, 1937.

Calendar of the Patent Rolls. Philip and Mary. Vol. I., 1553–1554. London, 1937.

Journal of the Commissioners for Trade and Plantations. January 1768 to December 1775. London, 1937.

(2) By THE KEEPER OF THE ASHMOLEAN MUSEUM.

Report of the Visitors, 1937.

(3) By THE DIRECTOR OF THE RUSSELL-COTES ART GALLERY
MUSEUM, BOURNEMOUTH.

Bulletin, Vol. XVII., No. 1.

The following Purchases for the Library were announced:—

Index to "The Diurnal of Occurrents," also Glossary. Edinburgh, 1938.

History of Ormiston. By W. Y. Whitehead, B.D., Phil.D. Haddington, 1937.

Old Kirkintilloch. By the Rt. Hon. Thomas Johnston. P.C., M.P. Kirkintilloch, 1937.

The Roman Pottery Kilns at Little London. Lincs. By Adrian Oswald, M.A. Shirebrook, 1937.

Reports of the Research Committee of the Society of Antiquaries of London. No. XI. Verulamium, a Belgic and two Roman Cities. By R. E. M. Wheeler, D.Litt., V.P.S.A., and T. V. Wheeler, F.S.A. Oxford, 1936.

Der Obergermanisch-Raetische Limes des Roemerreiches. Lieferung LVI. Berlin and Leipzig, 1937.

The following Communications were read:—

I.

EXCAVATION OF TWO BRONZE AGE BURIAL SITES IN AYRSHIRE. BY ALEXANDER G. McLEOD, M.A., F.S.A.Scot.

In the course of frequent journeys with me to Loch Doon via New Cumnock and Dalmellington to explore the ruins of the mediæval dwellings on Donald's Isle, Mr Archibald Fairbairn of Wellwood used to scan the surrounding moorland for traces of ancient monuments,



Fig. 1. Stone Circle at Beoch, Ayrshire.

and one day his observant eye noted a prominent upright stone at the top of a slight elevation in the rising ground close to the main road on the left. We proceeded to the spot and observed that several large stones, mostly prostrate, were arranged roughly in the form of a circle (fig. 1), and that within this circle the grass was short and green, whereas all around the moorland grass was long and white. In the following summer of 1937, having obtained permission from the tenant-proprietor of the sheep-farm, Mr Hamilton of Maneight, on whose land the stone circle was situated, we carried out a detailed investigation. In addition to Mr Fairbairn and myself, the late Mr William Macintyre, F.S.A.Scot., Cronberry, and Mr James Mair, Cronberry, took an active part in the work of excavation.

The site of the stone circle and burial cairn is on high ground 40 yards south of the road from New Cumnock to Dalmellington, at a

distance of $3\frac{1}{2}$ miles from Dalmellington and $7\frac{1}{4}$ miles from New Cumnock, at an altitude of 1053 feet above O.S. datum (O.S. Sheet XLVII.). The stone circle is surrounded by bare moorland, through which project many large boulders of granite. South-west of the cairn site are the

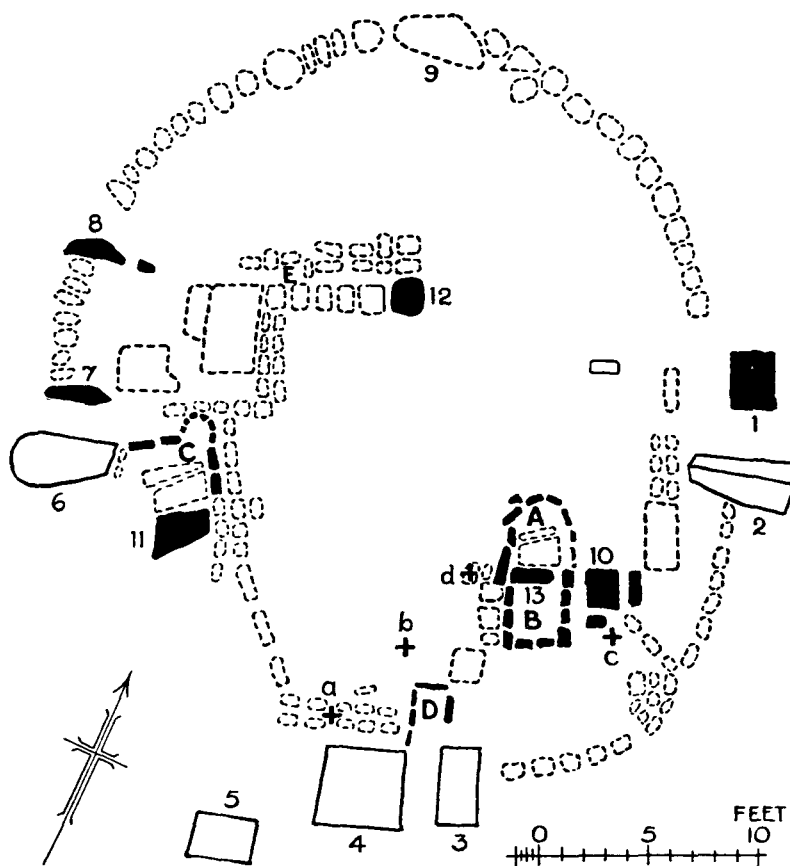


Fig. 2. Plan.

remains of an old fail dyke. At a distance of 140 yards to the south-east are the foundations of a steading, and farther to the east is a large rectangular sheep-fold, containing in its walls, doubtless, many stones from the vanished cairn.

The base of the cairn (fig. 2) is circular, measuring 35 feet in diameter. Nine large stones project above ground or lie partly exposed around the kerb, as shown on the plan. Of these nine the largest, numbered 6 on the plan, is a massive, prostrate slab, resembling a tombstone, 5 feet

long, 1 foot thick, and of maximum breadth 3 feet 6 inches. It tapers downwards to an oblique base, and must have fallen outwards when the cairn was removed. Stone number 2 is also a massive, prostrate, tapered stone, 4 feet 6 inches long, 1 foot 8 inches wide, and 2 feet thick. Stones numbered 4 and 5 are flat rectangular slabs, 8 inches thick. Of stones 1 and 3 the flat upper surfaces alone show above the turf, but both were found later to be deep-seated. Of the narrow keeled stones 7 and 8, 2 feet appear above the turf, but their bases turned out to be broad and deep-seated. Of the irregular flat slab numbered 9, 4 feet long and 1 foot thick, the rounded portion only at the western end shows above the turf. Within the circular base are three more large stones, of which the one numbered 10, the most prominent, measures 1 foot 5 inches by 1 foot 9 inches, and stands 2 feet 6 inches above turf-level. Stone number 11 is irregularly lozenge-shaped and stands 1 foot above the turf. Both these stones are stable and apparently extend down to bed-rock. Stone number 12 projects 6 inches above the turf in line with stone number 9 at a distance of 10 feet. In line with stones 12 and 9, two more stones appear above the turf beyond the circle towards the road at intervals of 10 feet. In line with pillar-stone number 10, and at right angles to its longest edge at a distance of 1 foot 6 inches, appears above the turf a slab numbered 13, 2 feet long and from 7 to 9 inches in width. This slab has parallel vertical sides and is firmly fixed in position. On the eastern side of stone 10 another long, narrow stone rises above turf-level, and two smaller square stones just appear south and west of it.

A trial section was first opened north-west of the centre, near stone 12, where there was a large depression. On the removal of the thin surface layer of turf, a compact mass of assorted stones was revealed. No regular plan was disclosed, but large boulders lay in confusion where they had been thrown when the cairn was disturbed. Later this test section was extended southwards beyond the centre, and at the place marked *b* on the plan, some burnt bones and scattered fragments of probably three cinerary urns were encountered among black earth of a fine texture between the boulders. One of these had been made of a red clay intermingled with grains of crushed granite. So far as can be ascertained, it has had a diameter of about $9\frac{1}{2}$ inches at the mouth, the lip being flat with slightly rounded edges. There has been a slight shoulder, and from the lip downwards the vessel has been decorated externally with an incised lattice pattern, but how far this pattern extended beyond the shoulder it is impossible to say. What may be a second vessel, of which only two small fragments of the wall remain,

shows decoration consisting of circular markings impressed on the soft clay by means of a hollow bone or reed. The third vessel is represented by small fragments only of what was probably a cinerary urn of rather coarse clay.

The ground west of the prominent pillar-stone number 10 appeared less disturbed, and a line of stones at surface level was suggestive of rough masonry. Accordingly this region was next stripped of its turf and cleared of loose boulders and black earth. On the northern side of stone slab number 13 was disclosed a cist. A, partially paved with two flat stones, at a depth of 1 foot and bounded on its western and

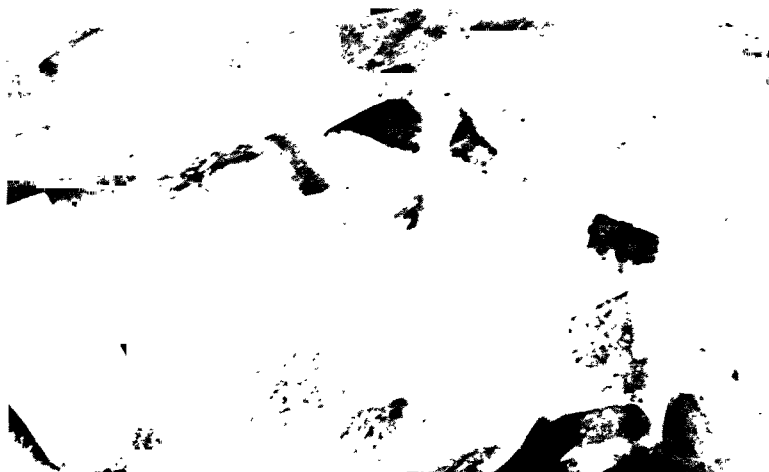


Fig. 3. Cist A. Beoch Stone Circle.

northern sides by a line of stones on edge, inclined inwards and firmly held in position by an external retaining wall (fig. 3). At the northern end, 3 feet 3 inches from the stone slab, a pit was exposed filled with black earth to the depth of 2 feet. The eastern side of the cist had been disturbed. Lying on the floor was a narrow dolerite block (fig. 4) 1 foot 11 inches long and triangular in section, two faces being 7 inches wide and the other $5\frac{1}{2}$ inches. On the narrow face are two sets of concentric rings, and between them three arches, the upper arch joining with the outer ring of each set, the second arch merging with the outer ring of the set on the left, while the lower arch stands alone. On the edge of the stone above the arches is another incomplete set of rings, and at the extreme end of the block are three incomplete rings with a central boss, which appears to have marks of pecking. All the rings

have probably been incised, although the natural wear and roughness of the stone makes this a little uncertain. The block is probably a fragment of a larger stone.

Another unpaved cist, B, was uncovered on the southern side of slab number 13, 2 feet 6 inches square and entirely enclosed by lines of stones. It contained black earth, but neither burnt bones nor fragments of pottery. Beyond the western wall of this cist were found three flat stones lying horizontally a foot beneath turf-level. A few irregular flat stones formed a continuation of the line of slab number 13. When they were removed, a heap of burnt bones was disclosed lying among

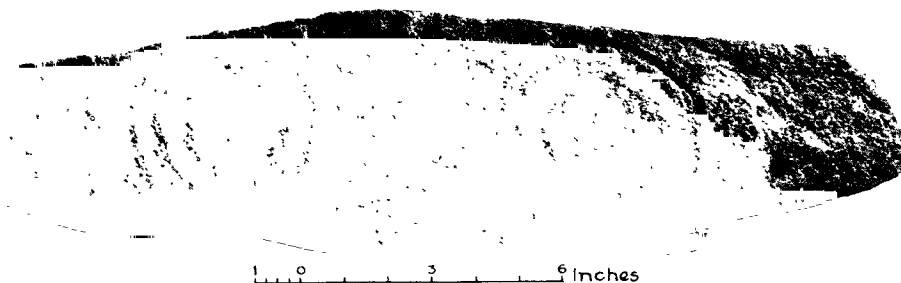


Fig. 4. Ring-marked Stone from Cist A.

black earth and small fragments of charcoal upon a flat stone slab, beneath the stone marked *d* on the plan. The excavation was extended south of pillar-stone number 10, where fragments of a different type of urn, thicker, coarser, and darker in colour, were found at C. South-east of the pillar-stone a compact portion of the kerb was exposed. The ground between stones 3 and 4 was also excavated, and the excavation continued towards the centre, disclosing five flat stones set on edge, enclosing a pit, D, full of boulders and black earth.

Attention was next directed to the northern portion of the southwestern quadrant between stones 6 and 11, and around the latter stone, which protruded 1 foot above the surface. The area between this stone and the large prostrate stone number 6 was partly paved at the depth of 1 foot with a long flat slab, 2 feet 9 inches long, from 7 to 8 inches thick, and from 1 foot to 1 foot 4 inches wide. This slab had parallel smooth sides, and appeared, like slab 13, to be part of the walls of a cist. It had probably been thrown down when the cist was disturbed. This area was enclosed on the east and north by lines of stones, at the junction of which, 3 feet 6 inches from stone number 6, and 4 feet 6 inches from

pillar-stone number 11, we exposed a semicircle of six flat slabs, of an average width of 9 inches and 1 foot 4 inches high, all set on end and wedged closely together. They partly enclosed a small pit (fig. 5), 18 inches in diameter and 2 feet deep, paved with three small flat stones. Upon these stones lay a heap of burnt bones, surrounded by black earth, but neither charcoal nor pottery was found in the pit. Some of the vertical stones were made up to the uniform height of 1 foot 4 inches by courses of small flat stones, as if it were the intention to cover the pit with a slab or slabs, but no cover-stone was found. Excavation was now carried northwards as far as the line from stone number 8 to stone

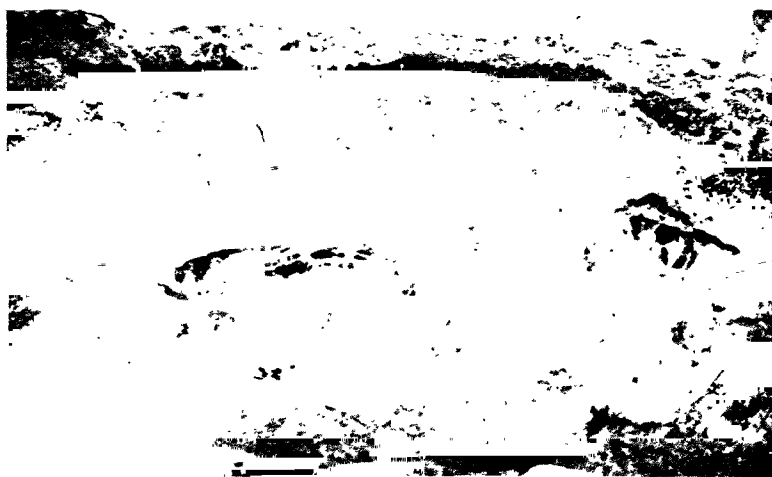


Fig. 5. Cremation Pit. Beoch Stone Circle.

number 12. A large flat stone, 3 feet by 2 feet, was uncovered in line with stone number 7, and 2 feet inwards were exposed two adjacent inclined flat stones, one 3 feet by 1 foot, and the other 4 feet by 2 feet 6 inches, both of which were 1 foot thick. Beyond the larger of these stones a line of large boulders extended up to stone number 12, and immediately behind it was found a double line of smaller boulders, placed end to end, turning sharply at right angles south of the large inclined stone and supporting the semicircular structure. North of the line of large boulders ending at stone 12 and at an average distance of 1 foot from it, extended an irregular parallel row of stones. At one point in the narrow passage between these rows, three large stones with flat faces partly enclosed a space, E, which, on excavation, yielded nothing but black earth. The remaining portion of the south-west

quadrant was next excavated, and it was discovered that the inner row of the double line of stones east of stone number 11 was continued south-eastwards. Another double line of stones was exposed parallel to the inner edge of the prostrate square stone number 4. In the course of the removal of this row of stones, fragments of pottery were found at a distance of 1 foot 8 inches from the north-west corner of stone number 4, at the point marked *a*. It consisted of the base and wall fragments of a small vessel of reddish clay, probably a beaker urn. A small portion of the rim, which survives, shows that the lip was bevelled slightly to the inside. Externally the vessel has been decorated from lip to base with small punctulations made with a pointed tool, those near the lip and at the bottom in parallel horizontal lines, but on the body with irregularity. The wall of the vessel is $\frac{5}{16}$ -inch in thickness, and the diameter of the base $3\frac{1}{8}$ inches. The external diameter at the mouth may have been 5 inches, but the fragment of rim is so small that an accurate estimate cannot be made. The fragments lay among black earth, but no trace of burnt bones or charcoal was observed in the vicinity. The remainder of the base of the cairn was stripped of turf, but not further explored, as no sign of internal structure was revealed. A semicircle of boulders at the kerb on the northern side was laid bare.

While the excavation of the base of the Beoch cairn was in progress, another enclosure bounded by standing stones was brought to our notice. These stones were situated near the summit of the long ridge of Rig Hill on the other side of the road 1 mile to the north-east, on Waterhead Estate, on ground belonging to Nith Lodge sheep-farm. Mr John Smith, the tenant of the farm, had observed these upright stones and willingly acceded to our request for permission to excavate the site. Permission was also obtained from the proprietor of the estate, the late Mr Cathcart Christie, through the factor, Mr John Graham, solicitor, Cumnock, who took a keen interest in our work throughout. Accordingly the party proceeded along an old footpath, which had once been a cart track, up Rig Hill—a wedge of high ground separating the valley of the Beoch Lane from the upper valley of the Nith—and inspected the site at an altitude of 1097 feet, half a mile north-west of Nith Lodge. From this point of vantage a noble prospect is commanded on a clear day. Towards the south-west the grey hills rise ridge upon ridge, with the cone of Windy Standard towering over all. Northwards the High Mount of Corsgailoch with its two circular plantations fills the foreground, while far away on the north-western skyline loom the serried peaks of distant Arran. Rig Hill is composed

of an intrusive mass of granite which crops out frequently above ground in lines of weathered jointed blocks, resembling heavy dry masonry. An outcrop of granite rises to the surface at the north-western kerb of the irregular ellipse formed by the standing stones, and another, larger outcrop rises above the surface only 6 feet distant from the south-eastern kerb. Between the kerb and this outcrop there is a distinct cart track. Another cart track passes west of the enclosure along the crest of the ridge, and can be followed down to the road and in the opposite direction over the summit to the roofless ruin of a farmhouse. The deep ruts of the track alongside the standing stones were probably

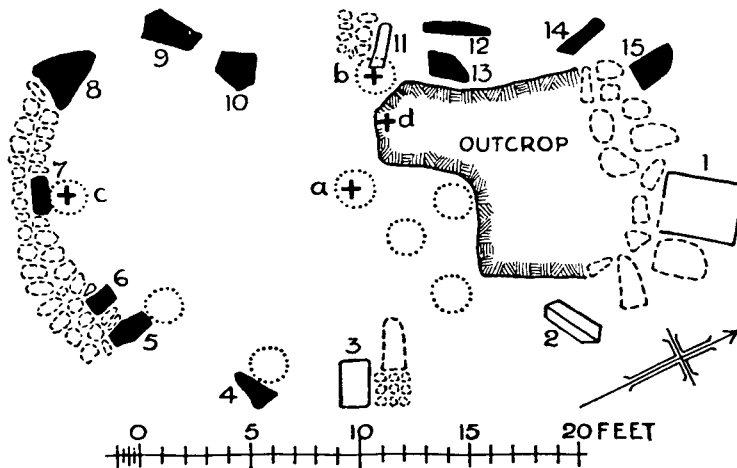


Fig. 6. Nith Lodge Circle.

made by a cart heavily laden with boulders. East of the enclosed burial-ground extends a peat moss, while the bare moorland stretches away on the other side down the long slope, which once was covered by trees. The enclosed area is 30 feet by 15 feet, the long axis of the ellipse being parallel to the direction of the outcrops, which doubtless determined its abnormal shape. Most of the fifteen stones face towards the centre. The largest, numbered 1 on the plan, is a massive prostrate slab, measuring 3 feet 6 inches by 2 feet 9 inches, and 9 inches thick. Stones numbered 2, 3, and 11 are also prostrate, while numbers 10 and 13 have fallen inwards. Of the upright stones the tallest stands only 2 feet above turf-level. Long grass is growing luxuriantly in the enclosed area, which is uniformly depressed towards the centre. Sheep are in the habit of congregating and sheltering here in stormy weather and at night, which accounts for the fertility of the soil. The upper

soil is dark and peaty; but the subsoil consists of reddish clay, grading downwards into layers of stiff, compact, grey boulder clay intermingled with stones. The subsoil is deepest in the south-western half of the enclosure. Along the western half of the minor axis of the ellipse an outcrop of bed-rock rises abruptly to less than a foot below turf-level. In most of the north-eastern half, only a shallow layer of clayey soil rests on bed-rock, save for three circular depressions on the eastern side. Each of these circular pits contained a cremation burial, covered over with hard packed clay. The bed-rock rises towards the northern end, where many large boulders were encountered beneath the turf,

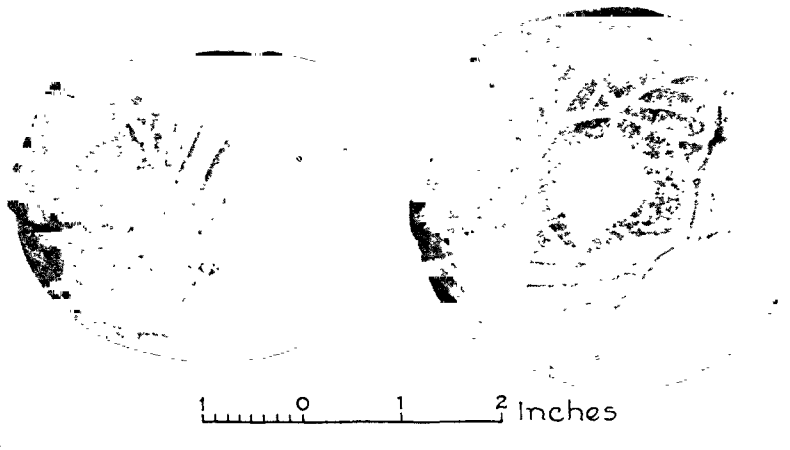


Fig. 7. Incense Cup-Urn from Stone Circle at Nith Lodge, Ayrshire.

and on the north-eastern side two large stones were exposed, which probably had been standing erect originally.

A trial section was opened first from the central minor axis south-westwards. At the depth of 1 foot 9 inches, black earth, mingled with many small pieces of burnt bones, was reached, and large fragments of a broken urn of "incense-cup" type were found near the centre at the spot marked *a*. The urn (fig. 7) is made of a light reddish-coloured clay, and measures $3\frac{1}{8}$ inches in height, $3\frac{1}{8}$ inches in external diameter at the mouth, $4\frac{1}{2}$ inches at the shoulder, and 1 inch across the base, which is cupped. The lower part of the vessel is globose and divided from the upper portion, which slopes steeply inwards at an angle of about 60° , by a raised moulding. The lip is bevelled sharply towards the interior, being $\frac{3}{8}$ inch in breadth and decorated with incised oblique

lines. There are three zones of ornamentation on the body, one above the shoulder and two below, divided one from the other by incised lines. All contain reversed triangles, plain and hatched alternately. Immediately below the raised moulding the urn has been pierced by two holes 2 inches apart.

Two months later the trial section was extended. At the base of stone number 11, at a depth of 2 feet, was found a pit of cremated bones, surrounded by black earth, charcoal (willow), and red ashes.

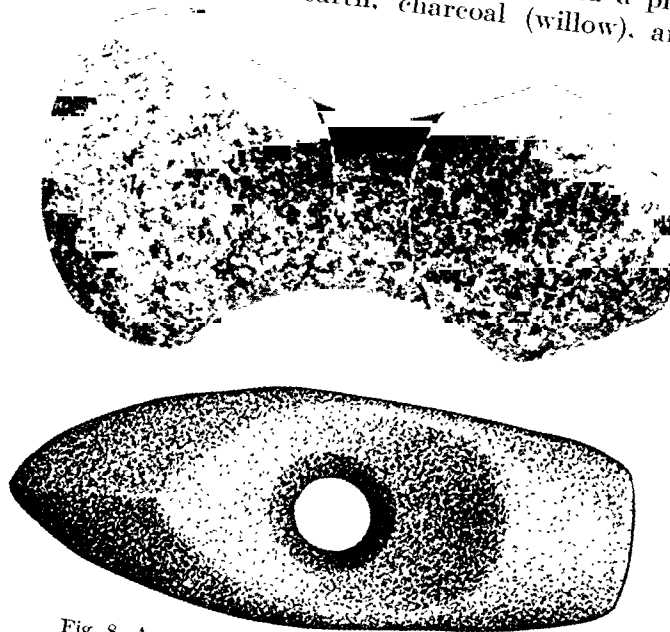


Fig. 8. Axe-hammer from Stone Circle, Nith Lodge.

covered by packed clay and protected above by three flat stones. At the point marked *d*, at a depth of 9 inches, lying near the edge of the granite outcrop, was found a perfectly shaped polished axe-hammer of dolerite (fig. 8). It measures $4\frac{29}{32}$ inches in length, $1\frac{5}{8}$ inch in thickness opposite the perforation, and $2\frac{3}{32}$ inches by $1\frac{5}{16}$ inch at the butt. From the cutting edge, which is $2\frac{19}{32}$ inches in breadth, and from the butt the axe contracts evenly to the centre of the perforation, where it is $1\frac{3}{16}$ inch in width. The extreme end of the butt is circular and flattened, being 1 inch in diameter. The hole, which has been bored from both sides, is equidistant from either end and measures $\frac{7}{8}$ inch in diameter externally, but tapering to $\frac{1}{2}$ inch in the centre of its interior. Afterwards the whole of the enclosed area was examined, and, in

all, eight cremation burial-pits were exposed, as shown by dotted circles on the plan. All but one were found at a uniform depth of 2 feet, occupying circular hollows from 18 to 20 inches in diameter. The heap of burnt bones in all cases but one was surrounded by a ring of black earth mixed with charcoal, and all were covered over with packed clay. Two of these circular pits were found at the bases of stones 4 and 5. Further exploration of the pit, *b*, beneath stone 11, revealed fragments of another "incense cup." Nearly half of the vessel remains (fig. 9). It has been biconical in shape and is made of a light red-coloured clay. It has measured $3\frac{1}{4}$ inches in height, $3\frac{5}{8}$ inches in external diameter at the mouth, $5\frac{1}{8}$ inches at the widest part of the body, and $3\frac{1}{8}$ inches at the base. The lip, $\frac{1}{2}$ inch in breadth, is slightly bevelled inwards and is decorated at intervals with single radial lines between which are double and triple horizontal lines. The upper part of the urn contains two rows of inverted triangles alternately plain and hatched, and a raised moulding or shoulder all bordered by incised lines. The moulding is ornamented by lines sloping obliquely from left to right and has been perforated by two holes.

At the base of pillar-stone number 7, 3 feet below turf-level, an inverted urn was found at the spot marked C on the plan. The pit in which this cinerary urn was found measured 18 inches in diameter. The urn was completely covered with packed clay. When removed, it was found to be full of incinerated bones. The vessel (fig. 10) is made of a reddish-brown coloured clay, with an overhanging rim and constricted neck immediately below. It measures $6\frac{5}{8}$ inches in height, $5\frac{7}{8}$ inches in external diameter at the mouth, $6\frac{1}{2}$ inches at the bulge, and $3\frac{1}{2}$ inches at the base. The lip is bevelled downwards towards the interior, and the overhanging rim is decorated with oblique lines made by the impression of a twisted cord, the remainder of the body being plain. Finally the kerb of packed boulders outside the irregular ellipse was also uncovered in three sections and found to extend beyond the standing stones for an average distance of 3 feet. The low burial-cairn, which would be required to protect the bones from wild beasts, must have been entirely removed with the exception of the kerb.



Fig. 9. Incense Cup-Urn from Stone Circle at Nith Lodge.

About half-way between the highest point of Rig Hill and the main road, on a level spur of the hill on its south-eastern slope, there is a small circle of eight stones, 9 feet in diameter, the stones projecting less than a foot above the turf. Within this circle on the eastern side is a large rectangular stone, 3 feet 6 inches long, from 1 foot to 1 foot 3 inches wide, and 1 foot 6 inches deep, with smooth vertical sides.



Fig. 10. Cinerary Urn from Stone Circle at Nith Lodge.

This slab formed one wall of an empty cist 2 feet 9 inches square, surrounded on the other three sides by stones placed close together and containing a considerable quantity of black earth, but neither burnt bones nor pottery. Rig Hill and its continuation as high ground across the road had evidently been selected as a burial-ground, probably on account of the dry nature of the soil as contrasted with the marshy, mossy, undrained valleys on either side, and also because the wind-swept ridge would likely be bare of all save stunted shrubs, whereas the valleys would be well wooded. Both cairn-sites seem to be family burial-grounds of the Bronze Age, and both exhibit a ring of standing

stones around the periphery. In both cases some of the standing stones are clearly associated with the burials. In the case of the Beoch cairn-site nothing was found below the undisturbed clay floor, whereas at the Nith Lodge burial-ground the incinerated bones were buried beneath the hard clay. At the Beoch cairn-site no incinerated bones nor fragments of cinerary urns were found within the two eastern cists, A and B. But the horizontal paving-stones on the floor of cist A seem to suggest that they were intended as bases for cremation burials, while the flat stones found lying beyond the western edge of cist B may have been placed originally on its floor to serve a similar purpose. The three cinerary urns, the fragments of which were discovered not far from the walls of cist B, may have been in the cists when the latter were opened, the urns broken, and their fragments scattered. These urns would be crushed under the weight of the cairn, unless they had been placed in cists protected by heavy cover-stones. The beaker urn, the fragments of which were discovered near the prostrate square stone numbered 4, may have originally lodged in cist D. The lines of stones, laid end to end on the eastern and northern sides, served as walls of cist C. Probably the fall of stone number 6 would have destroyed the western wall of this structure. The large stone slab found on the floor, so remarkably similar to stone slab 13, may have discharged a similar function. The two distinct remaining lines of stones probably preserved the remarkable semicircular stone structure at their junction, half-enclosing the cremation burial-pit. The line of large boulders extending to stone 12, and the inner line of smaller boulders at right angles to the above line and extending along the edge of the large inclined stone, may have been two of the sides of another rectangular enclosure, but the other sides were not discovered, the base of the cairn being greatly disturbed in this area—a decided depression at the surface revealing the extent of the disturbance. If, as seems probable, this area were the site of another cist, then all three inner stones, 10, 11, and 12, would be associated with cists. At the Nith Lodge burial-ground no such cists were erected, the cremation burials being protected solely by coverings of clay.

In both sites neither flint artifacts nor cores were found, nor were any weapons or personal ornaments of bronze discovered. Neither were the sites of the actual cremations located.

The excavating party desire to place on record their grateful thanks to Mr Andrew Hamilton, Mr John Smith, and Mr John Graham for their helpful advice and friendly interest in the work of excavation, and to Mrs Christie and Mr Hamilton for kindly presenting all the relics discovered to the National Museum of Antiquities of Scotland.

II.

TOLQUHON CASTLE AND ITS BUILDER.

BY W. DOUGLAS SIMPSON, M.A., D.LITT., F.S.A.Scot.

I.

The Castle of Tolquhon, one of the most interesting of the sixteenth century baronial mansions in which Aberdeenshire is so rich, is situated in the parish of Tarves, in the eastern part of the ancient Thanage of Formartine. Of this eastern part it formed the chief messuage, as Fyvie was of the western; and when the Prestons, lords of Formartine, failed in the main line, the Thanage was divided between the husbands of the two co-heiresses—Tolquhon thus being acquired by Sir John Forbes (a brother of the first Lord Forbes), who in 1420 had married Marjorie, second daughter of the deceased Sir Henry Preston.¹

Whether "Preston's Tower"—so called as far back as 1732²—which forms the oldest part of the castle, really dates back to before Tolquhon became a separate property under the Forbeses, it would be hard to say: but there is nothing about its architectural features at all inconsistent with a date about the end of the fourteenth or early in the fifteenth century, and the traditional name of the tower may therefore perhaps be accepted as genuine. At Fyvie there is also a Preston Tower. The "tower and fortalice" of Tolquhon are mentioned in a charter dated 2nd December 1536.³ At all events this "auld tour," with whatever barmkin walls and "laich bigging" may have adjoined it, was deemed sufficient for the needs of its owners until in 1584-9 (as inscribed on its walls) the castle was greatly enlarged by William Forbes, the seventh laird. Notices extant about this gentleman reveal a rather remarkable and attractive personality, cultured and enlightened beyond the average Aberdeenshire laird of his period. He founded and endowed a hospital in connection with the parish church of Tarves, "for four poor men who were to eat and lye here and to have each a peck of meal and three shillings, a penny and two-sixths of a penny Scots weekly; also some malt, peats, etc." ⁴ An inquest held on 15th February 1717 tells us how this charitable bequest was managed at that time. It was found

¹ *Collections on the Shires of Aberdeen and Banff*, pp. 352-3.

² *View of the Diocese of Aberdeen*, in *Collections*, *ut supra*, p. 330.

³ *Op. cit.*, p. 333.

⁴ *Collections*, *ut supra*, p. 330.

that "the Beidmen had ane peck of meal and 40 pennies each in the week, and had ane grey gown the one Martinmass and a Coat and Breeches the other, and that the tenants of Meikle Ythsey were as much bound to winn and lead peats to them as they were to pay their farmes;"¹ also that they had "ane hide for Shoes." In the Bede house was "a big chest with four locks and lids for their meal . . . and four Beds for the said Beidmen." "The Beidmen at their entry had a Chest, Bed, Bedcloaths, pot and pan, and cloaths once in two years." Fifteen years later it is recorded that while the fund is managed "very carefully, conform to the will of the mortifier," the house is "gone to Ruine." In the same year (1732) we read that "the meal and money they still have; but their house, which is slated, is neglected and quite waste."² And on 25th June 1735 the minister reports a melancholy state of affairs. The Beidmen were originally provided with a house "which used to be kept in good repair, sufficient furniture, and a large kail yard, and punctual payments of their money: but now the house is ruinous, the roof off, the furniture gone, and the yard misapplied so far as he knows; nor are the payments made to proper objects, at least to the satisfaction of the Kirk Session."³

The Bede house, or rather, its modern successor, still exists to the south-east of the village, and contains a stone with a much defaced Latin inscription in relief, commemorating its foundation by William Forbes of Tolquhon.⁴

In addition to founding this hospital, our laird erected for himself a stately tomb in the south aisle of the parish church of Tarves. This monument (fig. 1) is a remarkable example of the bastard Gothic of the period. Its general design remains thoroughly medieval, but much of the detail is pseudo-classical in character. This is particularly seen on the arcade in front of the tomb-chest, and in the balusters on either side. The grotesque animals on the extrados of the tomb-arch are quite in the whimsical and vigorous style so often found in sculptured work of this period in the north-east of Scotland;⁵ while the "mort's head" on the tomb-chest represents the incoming of a degraded taste that reached its climax in the two following centuries. On the dexter spandrel is a shield of florid design, showing the Forbes arms, with an esquire's helmet and the motto SALUS PER CHRISTUM, while on either side of the shield are the laird's initials and below it the date 1589. On

¹ I.e. rents.

² *Op. cit.*, p. 330.

³ T. Mair, *Narratives and Extracts from the Records of the Presbytery of Ellon*, pp. 298-300.

⁴ For a partial decipherment of the inscription, see A. Jervis, *Epitaphs and Inscriptions in the North-East of Scotland*, vol. ii, p. 351.

⁵ See *Proceedings*, vol. lxiv, p. 93; vol. lxxv, pp. 152-3.

the sinister spandrel a similar shield, having a man's hat for a crest, bears the arms of his wife, Elizabeth Gordon of Lesmoir, impaled with those of Forbes, together with her initials and the superscription DOCHTER

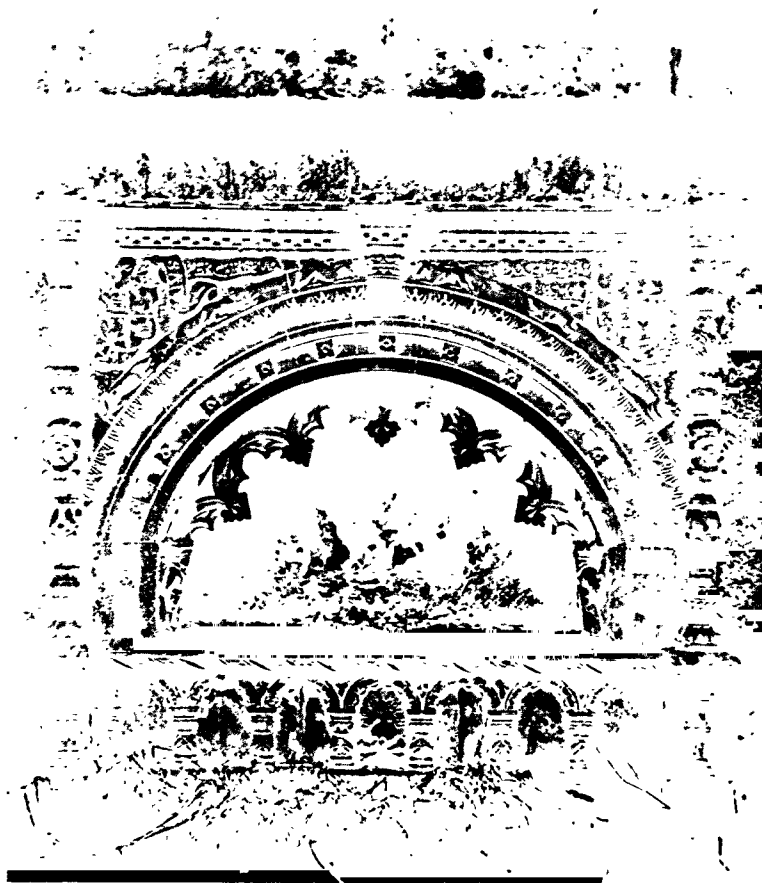


Fig. 1. The Tolquhon Monument in Tarves Kirkyard.

TO LESMOR. Portrait statuettes of the laird and his lady support the tracery on either side. The total height of the monument, to the top of the heavy battlemented cornice, is 7 feet 6 inches, and its over-all breadth is 8 feet 8 inches.

A curious licence, dated 8th February 1582, was granted to William Forbes by James VI, relieving him from all military duties because he was suffering from "ane dolour and diseaiss in his ene, proceeding be

ane distillatioun out of the heid," and further permitting him "to eit flesche with thrie or foure with him in companie in the forbidden tyme."¹ His fame is commemorated in elegiac strains by the Latin poet, Arthur Johnstone of Caskieben, whose language seems to imply that King James had visited the castle—a circumstance which might account for the interest he displayed in the laird. The poem was evidently designed to be inscribed upon his tomb in Tarves:—²

"*DE GULIELMO FORBESIO TOLCHONO.*

*Aurisset cum prole domum Tolchonus et arvis
 Confectus senio sponte reliquit humum.
 Condidit hunc tumulum quo conditur ipse, supremum
 Expectans animo nil metuente diem.
 Hunc prope pauperibus devotos aspicias agros
 Tectaque mortali non violanda manu.
 Nec procul his domini surgunt palatia, regis
 Non semel hospitio nobilitata sui.
 Has terris monimenta dedit Tolchonus, et inter
 Has operum moles crescere vidit opes.
 Quantulus, exuvias si spectas corporis, alti
 Si pensas animi munera, quantus homo est."*

The reference to the Bede House at Tarves—"tectaque mortali non violanda manu"—has now an ironic ring in view of its recorded history as we have summarised it above.

The most interesting monument that the old laird has left behind him is undoubtedly the very considerable extension which he built to his castle, converting the cramped "auld tour" into a spacious mansion laid out upon a design much more ambitious than was usual among the houses of Aberdeenshire country gentlemen of the period. And a mortification of his property, dated 3rd December 1589³—six weeks after the work of building was finished—makes it clear that the castle was furnished in keeping with its architectural pretensions; for in the list of his effects are included: "my haill siluer wark, buikis, bedding, tapestrie, neprie, timmer wark, artalyerie, wther furniture insycht and plenising quhatsumewer." Elsewhere in the same inventory he dwells, with what seems a touch of pardonable pride, upon the ample accommodation provided by his new mansion, enumerating "within the wallis

¹ *Collections, ut supra*, pp. 353-4.

² *Epigrammata Arturi Ionstoni, Scoti, Medici Regii, Abredoniae. excudebat Edvardus Rabanus, cum Privilegio*, 1632, p. 21. The poem must have been written a considerable while after the laird died in 1596, for at that time Johnstone was only eight years old. The allusions make it clear that it is to the seventh laird, and not to his son, who was also called William, that the poet refers.

³ *Collections, ut supra*, pp. 354-5.

of my houiss, tour, and place of Tolquhone," "my hallis, gallareis, chalmeris, vardrepe, kitchingis, stabillis, sellaris, lednaris, pantreis, librellis, or wther office houissis quhatsumewer."

We like to think that the laird who thus classed his "bui kis" as next in value to his plate was a scholar of sorts. His library was long preserved at Whitehaugh, in the Howe of Alford, where the representatives of the Tolquhon Forbesees settled after their dispossession from their ancestral home: but most unfortunately it was dispersed piecemeal about the middle of the last century. In Beattie's correspondence, preserved in the Aberdeen University Library, there is a letter from Mr Forbes Leith of Whitehaugh, dated 26th April 1779, in which he states that he had lent Dr Beattie certain "Old Musick Books which had belong'd to my predecessors, and were found by me among some small remains of a valuable Library, which my Gt. Gt. Grandfather, Wm. Forbes of Tolquhon, possess'd about 200 years ago—I find many of his books mark'd in 1588, he was then aged 38 years, and he lived till 1643. Whenever I can recover any bearing his name—or that of Geo. Ogilvie, with whom he was connected, I think them an Acquisition."¹ It was, however, not the builder of the castle, but his son, the second William, who died in 1643.

Some particulars of the library are preserved in a short notice, over the initials J. M., which will be found in *Notes and Queries* for 10th September 1859.² I imagine that the author of this notice was James Maidment. In it he speaks of William Forbes of Tolquhon as "a great book collector," and as to his library he says that "the very rare and curious volumes which recently came from the north, and were disposed of in detached portions by Mr Nisbet in Edinburgh at various times, made it a matter of regret that the library was not sold in its entire state with a proper descriptive catalogue." Maidment (if he be the writer) is dealing particularly with an edition of Erasmus's *Apophthegmata*, quarto, 1533, written on the flyleaf of which was a letter in the hand of Florentius Volusenus (Florence Wolson, the author of the *De Tranquillitate Animi*) presenting the volume to his friend John Ogilvie, parson of Cruden. Ogilvie in return is requested to send a little nag (*equuleum*) as Wolson proposes to go to the country, and requires the use of a horse. He reminds Ogilvie of the pleasure he sometimes had derived from Erasmus; and he makes many enquiries about their mutual acquaintances, and in particular sends his love to Master Hector Boece. The book had subsequently come into the possession of the laird of Tolquhon,

¹ Beattie Correspondence, letter C. 327 (Aberdeen University Library).

² Second series, vol. viii. p. 203.

as appeared from his autograph on the title-page, thus: "William Forbes of Tolquhon, 1588."

In the Library of the Diocese of Aberdeen and Orkney—now housed, under an arrangement with the Synod, in the University Library at King's College—is preserved another book that had belonged to the old laird. It is a folio edition, in a modern binding, of the works of Joannes Damascenus, printed at Basel by Henricus Petrus. March 1535. On the title-page (fig. 2) is our laird's autograph, in a bold and cultured hand, full of character: "*Villeame forbes of tolquhone, 1588.*" Beside it is the autograph of his descendant, Beattie's correspondent, John Forbes Leith of Whitehaugh, and the date 1778. But what makes this book still more interesting is the fact that underneath the device of Henricus Petrus is pasted in the *ex libris* of Robert Reid, Abbot of Kinloss from 1526, and Bishop of the Orkneys from 1541 until his death in 1558.¹ Reid was one of the foremost churchmen of his day, distinguished alike as a statesman, a builder, and a patron of learning. He was a great lover of books, and erected a splendid vaulted library at Kinloss.² The association of this book with Kinloss at once arouses our interest, when we remember that Florence Wolson, to whom the other book (which came into Tolquhon's possession in the same year) had belonged, was a "Moray Loon"—born, as he himself tells us, near the River Lossie. After being educated at Aberdeen University, Wolson went to Paris, probably to the Scots College, which was founded in the first place for students from Moray. In Paris he entered the service of Cardinal Wolsey as tutor to his nephew, Thomas Wynter, Dean of Wells, who at that time was studying in the French capital. This connection with Wolsey involved Wolson in various diplomatic activities, and he is known to have visited London in 1534. The terms of his letter to John Ogilvie, parson of Cruden, accompanying the gift of the *Erasmus*, make it quite clear that Wolson was then in the north country; and it seems reasonably certain that he seized the opportunity of his mission to England in 1534 to revisit the scenes of his boyhood. The date of this visit was certainly after 1533, in which year the *Erasmus* was printed, and before 1536, in which year died Hector Boece, to whom he sends his greetings. Now Ogilvie also had been brought up in Moray, and we know from Wolson's own testimony that they had been youthful

¹ The latter part of the book contains a few marginal glosses in Reid's handwriting.

² "*Hoc anno 1538 extruxit amplissimam bibliothecam, testudinibus tamen munitam contra ignem, ubi primum fuerat deambulatorium Thomae Chrystall abbatis*—Ferrerius, *Life of Abbot Robert Reid*, in *Records of the Monastery of Kinloss*, ed. J. Stuart, p. 57. Cf. *ibid.*, p. 51: *instituit practer satis copiosam in omni disciplinarum genere bibliothecam . . . et ne quid desit iam aggredietur domum elegantissimam quadrato lapide in quo libri asserventur.*"

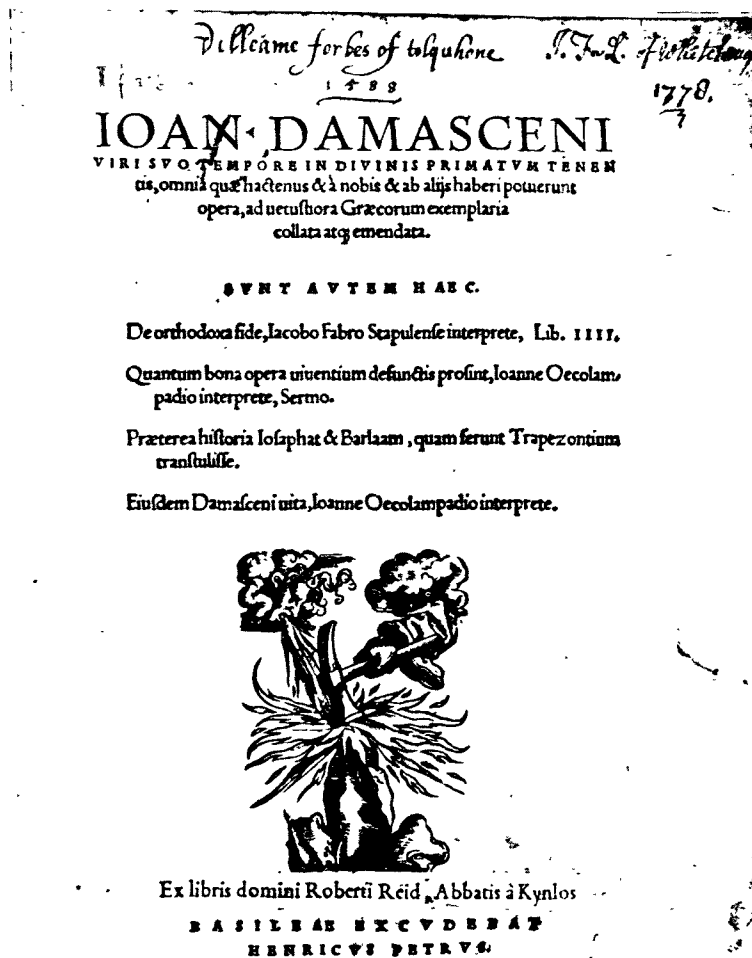


Fig. 2. Joannis Damasceni Opera (Basel, 1535), with bookplate of Robert Reid, Abbot of Kinloss and Bishop of the Orkneys, and signature of William Forbes, seventh laird of Tolquhon.

companions in their walks and literary discussions along the banks of the Lossie.¹ It will be noted that both books, the *Erasmus* and the *Damascenus*, came into the hands of William Forbes in the same year 1588. May the *Damascenus* also, therefore, have come from the library of John Ogilvie, and may it have been a gift to him from the Abbot of Kinloss? If both Ogilvie and Wolson visited Kinloss between 1533 and 1536, the *Damascenus*, which was printed in March 1535, must have been newly in Reid's hands, and the date of their visit is thus practically restricted to the latter year—a circumstance wholly in accordance with the known fact that Wolson was in London in 1534. (He was back in Paris in September 1535, and on the 19th of that month he started from Chalmont on the journey to Italy that resulted in his appointment as professor of eloquence at Carpentras.)² And, if all this be true, how did two books that belonged to Ogilvie come into the possession of the laird of Tolquhon in the year 1588? Is it a coincidence that our laird's son and successor married an Ogilvie—Janet, daughter of Sir George Ogilvie of Dunlugas, who evidently must be the George Ogilvie, also an owner of books, with whom, according to Forbes Leith in his letter to Beattie, the laird of Tolquhon was connected? John Ogilvie, the parson of Cruden, in 1555 was created by Pope Paul IV a Canon of Aberdeen,³ and was still alive on 1st November 1570, when he witnessed a feu charter of certain lands in Old Aberdeen.⁴

Of course we have been wandering in a realm of pure conjecture, though it is conjecture with more than a dash of probability in it. But it is enough to have placed on record two books that belonged to our scholarly old laird of Tolquhon, and to note that they associate his library with a group of distinguished and highly cultured men—the last and, in some respects, the finest flowering of the medieval church in Scotland.

Two other volumes belonging to the old Tolquhon Castle library were in the possession of the late Miss Fyers, Camp Cottage, Kirkton of Maryculter, a descendant of the family. One of these books, which unfortunately lacks the title-page, is an interesting folio in *lettres bâtarde*, printed in Paris by Maistre Nicole de la Barre, 1518. The work is entitled *Croniques et Mirouer Hystorial de France*, a translation of the Latin original by Robert Gaguin. On folio AAii, *recto*, with which the

¹ "Dum ego et Joannes Ogilvius, qui nunc apud Scotos Crodanam regit ecclesiam, vir ut generis claritate ita literis et moribus ornatissimus, una (nam multum una esse solebamus) in ripa Lossaei amnis deambularem, principium illud sermonem Horatii (nam Horatius prae manibus erat) . . . nobis occasionem dedit," etc. Volusenus *De Animi Tranquillitate*, ed. 1751, p. 100.

² *Letters and Papers (Foreign and Domestic), Henry VIII*, ed. J. Gairdner, vol. ix. p. 131, No. 395.

³ *Ant. Aberdeen and Banff*, vol. iii. pp. 119–20.

⁴ *Fasti Aberdonenses*, pp. 128–9.

copy, which is in a late eighteenth-century binding, now begins, is the signature "Williame Forbes of Tolquhon, 1588," and also that of John Forbes Leith of Whitehaugh, 1778. Other owners, who have left their names on the last page, were "Jhone Meldrum, Marchemond Herald," and "Thome Meldrum burgis of Aberdene."

The other volume is a large folio blackletter Bible, printed at London by Christopher Barker in 1583. It is of interest, because it bears on the title-page the signature of George Ogilvy. On folio 532, *verso* (being the blank page at the end of the Old Testament). William Forbes, the twelfth and last laird, has entered the particulars of his marriage to Anna Leith, daughter of John Leith of Whitehaugh, and the births of his children, three sons and two daughters. Very curiously, the names and dates have been carefully blacked out.

Doubtless other books belonging to the old laird still survive, scattered about the public and private libraries of Great Britain and America: but inquiry has failed to trace any of them.

In 1550 our laird, who three years previously had succeeded his father, fallen at Pinkie, was bound over in two thousand pounds, for his son and "friends" (*i.e.* relatives), not to trouble the Provost and Baillies of Aberdeen.¹ Whatever the dispute may have been, it left no abiding ill-will, for on 27th October 1578 he was elected a burges of the city.² As a witness to writs his name is constantly found, and it is clear he was a much respected man whose assistance in legal matters was constantly sought by his neighbours. He added considerably to his patrimony, purchasing in 1585 the lands of Woodland, Knaperna and half of Tullimad.³

In national affairs his appearances are few, but uniformly creditable. On 2nd September 1574 he signed at Aberdeen the "Band of the Baronis in the North," professing allegiance to the Regency of Morton.⁴ And on 30th January 1580, along with other northern barons, he was directed by the Privy Council, in accordance with measures then being taken to compose the feud between the Gordons and the Forbeses, "to subscribe sic formes of assuurances as salbe presentit unto thame, notit by the clerk of Counsale, to induir unto the first day of August nixt to cum, within XXIII houris nixt eftir they be chairgit thairto. under the pane of rebelloun."⁵ On 23rd April following it was reported to the Council that the required assurance had duly been given.⁶ But the quarrels were too deep-rooted thus easily to be composed, and on 10th July

¹ *Reg. Council Aberdeen*, vol. i. p. 138.

² *Ibid.*

³ *Ibid.*, vol. iii. p. 261.

⁴ J. Davidson, *Genealogy of the House of Tolquhon*, p. 14.

⁵ *Reg. Privy Council*, vol. ii. p. 401.

⁶ *Ibid.*, p. 279.

Tolquhon associated himself with others of his name in renewed complaints against the Gordons.¹ On 19th February 1589 he sends in a petition to the Council, stating that he ought not to be included among those whom Lord Forbes and the Master of Forbes are charged to enter before the King and Council as pledges for the good conduct of the Forbeses, seeing that he is not a tenant of Lord Forbes, but is "ane gentilman holding his landis immediatlie of his Majestie, and the same landis and his dwelling lyand in Buchane, and he, his haill tenmentis and servantis, being subject to the course of justice." It would be unreasonable, he urges, to "burdyn the said complenair that duellis laich in Buchane with the disobedience of ony brokin men of the surname of Forbes" residing in Mar and Strathdon. The Council admitted the force of his contention, and granted the exoneration that he craved.² Our laird's loyalty and restraining action upon his tenantry amid the inveterate feuds of the time are again appreciatively referred to in connection with a complaint by two of his tenants on 24th June 1590.³

William Forbes did not live long to enjoy the comforts of his "houiss tour and place," for he was dead before 22nd March 1596.⁴ What has been stated to be his portrait by Jamesone, in the possession of Lord Saltoun and formerly at Philorth House, is reproduced in *Musa Latina Aberdonensis*: but unfortunately it is a portrait not of our laird but of his son, also William, whose daughter married Sir Alexander Fraser of Philorth—hence the reason for her father's portrait being there. In 1596, when our William Forbes died, Jamesone was only six or seven years old. Probably the old laird's expenditure had outrun his means: at all events, throughout the next century the family fell more and more into embarrassment. The tenth laird made a bold effort to right himself by participation in the Darien Scheme, whose collapse spelt ruin to the House of Tolquhon. In 1716 the estate had to be sold, and on 5th September 1718 the eleventh laird, who had refused to abandon the home of his fathers, was wounded and dislodged by a party of redcoats.⁵ Tolquhon ultimately passed to the Earls of Aberdeen, and a portion of the castle was inhabited as a farmhouse until well into the last century. In 1929 the ruins were handed over by the Earl of Haddo to the custody of the Ancient Monuments Department of His Majesty's Office of Works.

Mr J. C. M. Ogilvie Forbes of Boyndlie has in his possession the original manuscript of Matthew Lumsden's *Description of the Genealogie of the House of Forbes*, as continued down to 1667 by William Forbes of

¹ *Reg. Privy Council*, vol. iii. p. 401.

² *Ibid.*, vol. iv. p. 356.

³ *Ibid.*, pp. 493-4; cf. p. 576.

⁴ Davidson, *op. cit.*, p. 15. The date is given as 17th February 1596 by A. and H. Tayler, *The House of Forbes*, p. 396.

⁵ Davidson, *op. cit.*, p. 17.

Leslie. That this Boyndlie manuscript is Forbes's original draft is clearly shown by the fact that it contains at the end of it a number of memoranda and jottings about further matters which Forbes wished to clear up with a view to making the treatise still more complete. For the most part these memoranda are concerned with minute details of local genealogy; but at the head of them is the following surprising statement:

"Nota the renowned Navigatour Martine Forbisher is descended of the house of Tolquhone but tyme hath worne out the knowledge of his parents."

The authorities upon Sir Martin Frobisher know nothing about this alleged Scottish descent. It would be extremely interesting were confirmation of it to be forthcoming.

II.

To the March 1925 issue of the *Aberdeen University Review* I contributed a full descriptive survey of the ruins in their then condition. It is sufficient, therefore, in the present paper to resume the main features of the castle, and to describe in greater fulness the new details revealed in the course of the operations carried out by the Ancient Monuments Department.

Whereas most of the contemporary mansions in Aberdeenshire were built upon one of the numerous varieties of the tower-house plan, William Forbes chose to erect his "new wark" on the design of a rectangular block enclosing a court, Preston's Tower being incorporated into the north-east angle of the additions. This courtyard (see plans at end, figs. 12, 13) measures 68 feet by 50 feet. In the centre of the north front (figs. 3, 4) is the gatehouse (fig. 5) which, with its arched portal, flanked by sturdy drum-towers with heavily grated windows, and enriched with moulded stringcourses, grotesque figurines, fanciful gun-loops, and coats-of-arms, has an unusual and somewhat imposing effect. The gatehouse is dated 1586. It is balanced on the east side by Preston's Tower, and on the other side by a round tower (figs. 3, 6, 10) salient from the north-west angle of the castle. This round tower corresponds to a square tower (fig. 7) projected at the south-eastern angle—the whole arrangement thus forming a remarkable and very well thought-out application, to a courtyard castle, of the so-called Z-plan, in which angle towers are écheloned at each of two diagonally opposite corners of the main building. Beside the gatehouse is a panel with the following



Fig. 3. Tolquhon Castle: view of North Front.

[*Photo, D. L. Medd.*]



Fig. 4. Tolquhon Castle about 1840.

From the painting by James Giles, R.S.A., now at Whitehaugh.

finely cut inscription:—AL·THIS·WARKE EXCEP·THE·AULD·
TOUR·WAS·BEGUN·BE·WILLIAM·FORBES·15·APRILE·1584
·AND·ENDIT·BE·HIM·20·OCTOBER·1589.

The principal apartments occupy the south side of the quadrangle and take the form of a long building with a "jam" or staircase wing attached. In the basement, which is vaulted, are the kitchen and three cellars, with two service stairs to the main floor above. Midway in this wing a round staircase tower (figs. 7, 8) projects upon the courtyard,

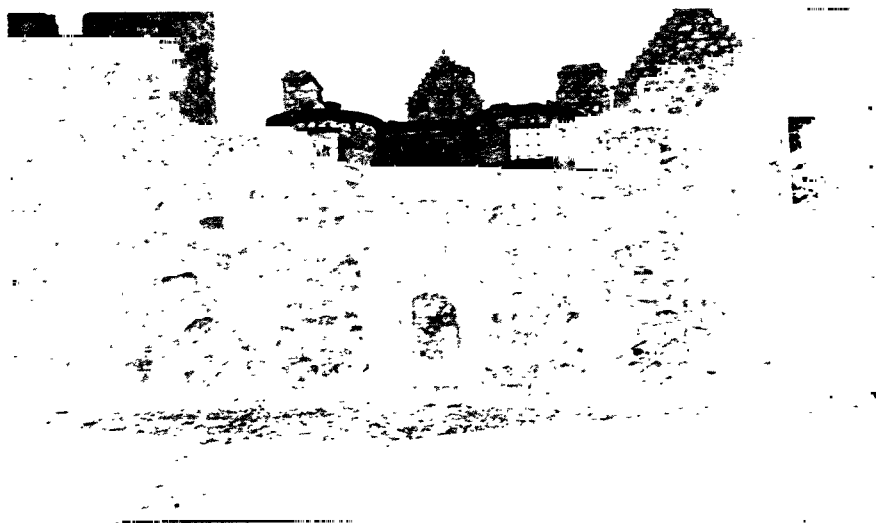


Fig. 5. Tolquhon Castle: view of Gatehouse.

[Photo, D. L. Medd.]

and contains in its basement a stone shelf for dishes, conveniently placed for the service window in the kitchen. The main entrance in the "jam" is a fine arched portal, and within a spacious scale-and-platt stair, mounting over a vaulted guardroom, gives access to the first floor. Here is a handsome and well-lit hall, measuring 37 feet by 19 feet, with a sandstone pavement of hexagonal flags interlocking with smaller squares. Beyond the hall is the solar or private room, off which opens a small oratory. Access to the upper storey is obtained by a wheel stair in the drum tower, which above the eaves level is corbelled out into a picturesque corbie-stepped cap-house. There is a secret chamber, perhaps a "lug," forming an entresol in the end wall of the private room, and reached by a hatch from the floor above. Over the main stair landing in the "jam" are two storeys of living rooms, served by a small wheel stair.

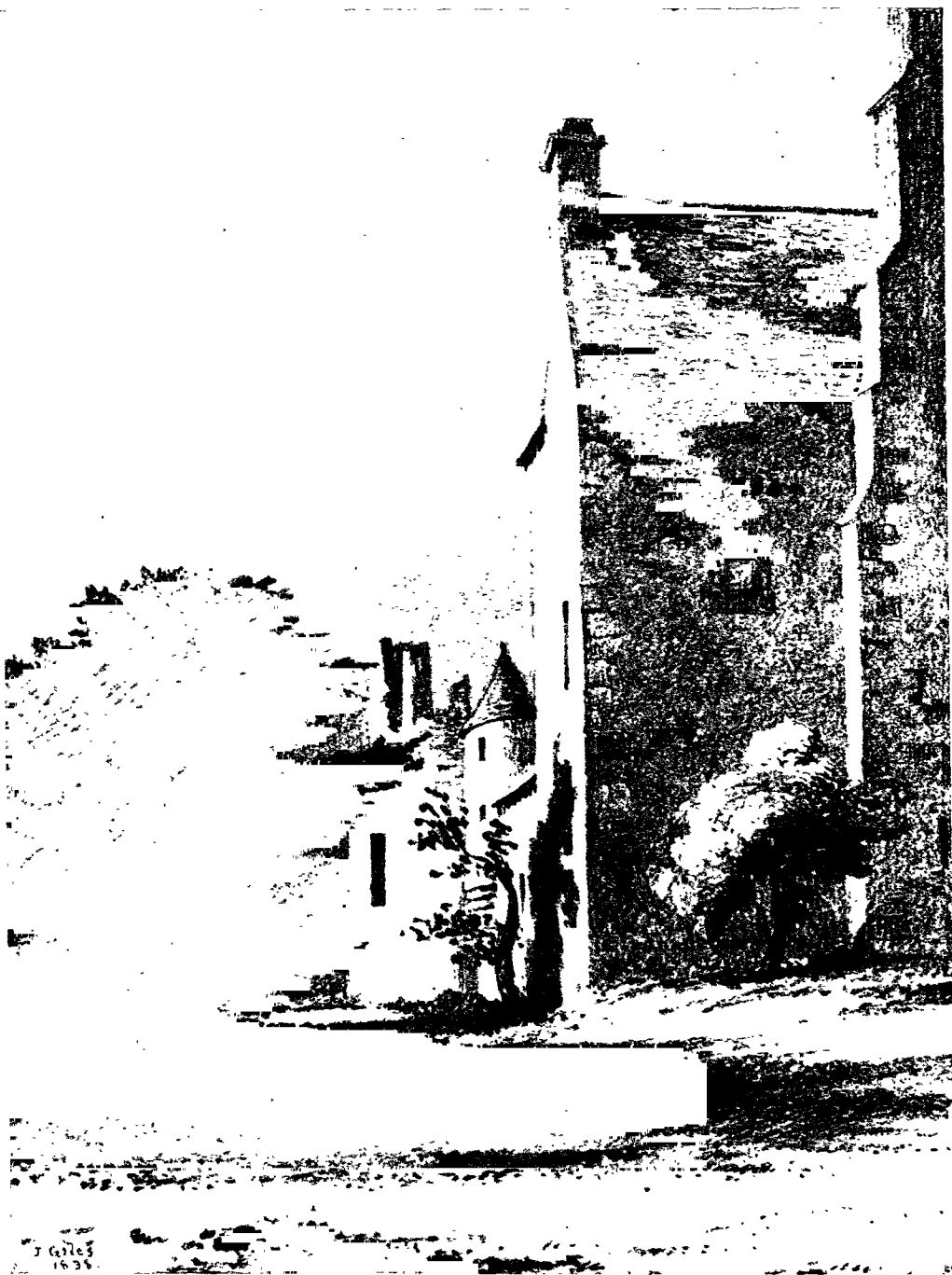


Fig. 6. Tolquhon Castle: view looking northwards along West Front.
Drawn by James Giles, R.S.A., 1838.



Fig. 7. Tolquhon Castle: view of East Front and South-East Tower.
Drawn by James Giles, R.S.A., 1838.

This main portion of the castle forms a building by itself, and was constructed as a unit. It is structurally separate from the east wing.



[Photo, D. L. Medd.]

Fig. 8. Tolquhon Castle: Tower in Courtyard.

and the west wing was later built on to the “jam”—as appears from a well-marked joint. The west wing is of two storeys, containing in the basement vaulted cellars and a brew house, and on the first floor a spacious gallery, measuring 57 feet by 14 feet. In the round tower at

the north-west corner are a vaulted cellar and two bedrooms, the lower one vaulted, and the upper one being reached by a small turret stair.

The north or gatehouse wing again forms a structural unit, set in between Preston's Tower and the west wing. As it is dated midway in the building period, it was probably erected next after the south or main wing, and the two lateral wings completed last of all: although it is equally clear that the whole castle forms one design, and was so contemplated from the outset. The north wing contains in its basement the trance and guardhouses all vaulted, and on the upper floor an extension of the gallery, with alcoves in the drum towers.

The east wing, which is greatly ruined and has not been vaulted, appears to have provided offices in the basement and guests' rooms above. At its south end is the bakehouse, with two ovens in the square tower, the two upper storeys of which were bedrooms, reached by a turret stair. Through a hatch in the floor of the lower bedroom a small "pit" or prison is reached, behind the ovens.

The only other castle in the north of Scotland that at all closely resembles Tolquhon Castle is Boyne, near Portsoy. Here the symmetrical quadrangular lay-out, not being impeded by an older tower, is carried out with even greater *konsequenz* than at Tolquhon.¹ Somewhat similar accommodation, though on a less symmetrical design, is provided by the "palace" at Dunnottar:² while the newer building of Edzell Castle³ also has points of resemblance to Tolquhon. Between the old house of Schivas, also in the parish of Tarves, and the south wing of Tolquhon, the resemblance in plan is so close, and the details, such as the ornate gunloops, are so precisely similar, that it is hardly possible to doubt they are both the work of the same master mason.⁴

An interesting feature about Tolquhon Castle is the large outer court (see plan, fig. 14), with a fore-gate (fig. 9) and "laich-biggings," including a dovecot at the north-east corner. On the west side of this there still exists an ample pleasance (see plan, fig. 14, and illustration, fig. 10) showing a cruciform arrangement of trees in two broad intersecting avenues of sombre old hollies and yews. If this lay-out is also due to the seventh laird, we are still more impressed by his advanced ideas. Connected with the pleasance are a curious series of twelve small recesses, probably for skeps, in the forecourt wall (fig. 10). Similar provision may be seen in the precinct wall at Pluscarden Priory, and in

¹ See my description of Boyne Castle in *Trans. Banff Field Club*, Oct. 1931, pp. 69-81.

² See my *Dunnottar Castle*, 3rd ed., pp. 41-8.

³ See my paper in *Proc. Soc. Ant. Scot.*, vol. lxxv. p. 133.

⁴ See description of Schivas by Mr J. Fenton Wyness, F.S.A.Scot., in *Proc. Soc. Ant. Scot.*, vol. lxxiii. pp. 384-91; also *Country Life*, vol. lxxxiv., No. 2165 (July 16, 1938), pp. 68-9.



Fig. 9. Tolquhon Castle: the Forecourt Gate.
Drawn by James Giles, R.S.A., 1838.

one of the old walls in the policies of Hatton Castle, near Turriff. All round the castle are the survivors of fine old beech and ash trees. The state of these ancient policies, before the castle was taken over by His Majesty's Commissioners of Works, may be best recalled in a passage



[Photo, D. L. Meild.]

Fig. 10. Tolquhon Castle: view in pleasance, looking towards North-West Tower.

from the third chapter of *Kenilworth*, which is so apt in every particular that it might well have been written about Tolquhon:—

“They stood now in an avenue overshadowed by such old trees as we have described, and which had been bordered at one time by high hedges of yew and holly. But these, having been untrimmed for many years, had run up into great bushes, or rather dwarf trees, and now encroached, with their dark and melancholy boughs, upon the road which they once had screened. The avenue itself was grown up with grass, and, in one or two places, interrupted by piles of withered brushwood, which had been lopped from the trees cut down in the neighbouring park, and was here stacked for drying. Formal walks and avenues, which, at different points, crossed this principal approach, were, in like manner, choked up and interrupted by piles of brushwood and billets, and in other places by underwood and brambles. Besides the general effect of desolation which is so strongly impressed, whenever we behold the contrivances of man wasted and obliterated by neglect, and witness the marks of social life effaced gradually by the influence of vegetation, the size of the trees and the outspreading extent of their boughs, diffused a gloom over the scene, even when the sun was at the highest, and made a proportionate impression on the mind of those who visited it.”

The principal discoveries that have been made, during the conservation proceedings, are in connection with clearing out Preston's Tower. Above its basement only the two outer walls remain, and these in a greatly ruined state. The interior walls had fallen into the court and filled it with a mass of ruin. Preston's Tower measures 40 feet 6 inches by 29 feet, and at ground level the walls are 7 feet 6 inches thick. On its north-west corner three corbels of a machicolated "round" or angle turret still exist, at a height of 45 feet above ground. The masonry of the "Auld Tour" is much more massive than that of the later buildings, being composed of larger boulders with fewer pinnings. A vaulted cellar occupies the basement, and is lit by a single loophole on the north and west faces. The entrance, defended by outer and inner doors, is in the south wall. Although the upper part has now disappeared, voussoirs lying amid the ruins show that it terminated in a pointed arch having a hood-mould, bevelled above and hollowed underneath, resting on plain stops of which the west one was carved with a rosette. This detail is quite in keeping with a date about the end of the fourteenth century. Midway in the east side of the entrance passage a straight mural stair leads up to the hall on the first floor. In the west wall there has been a service stair, descending from the screens end of the hall as a vice and finishing with three straight steps down into the cellar, the lowest being at a height of 9 inches above the floor. This arrangement is very unusual. The hall is now greatly ruined. At its northern or dais end is a large fireplace, 7 feet wide, with jambs showing a filleted and quirked edge roll between hollows. The hall was lit by a large window on either hand, with seats in their ingoings: the west window was blocked when the gatehouse wing was built. In the north-east corner is an aumbry. The main stair enters the hall at the south-east corner, and here also is placed the garderobe. In connection with William Forbes's additions a door was slapped through so as to give access to the east wing.

In clearing away the fallen stones which encumbered the tower, an exceedingly fine heraldic stone was discovered (fig. 11). It displays in bold relief a shield of heater pattern bearing arms, a cross-crosslet fitchée for Leith between three bear's heads muzzled and coupé for Forbes, surmounted by a tilting helmet, mantled and having a bear's head as a crest. William Forbes, the fifth laird, who succeeded in 1509, married a daughter of Leith of Barnes. On the dexter spandrel is carved in high relief a symbol resembling an early form of arabic numeral four. This stone is one of the first pieces of medieval heraldic sculpture remaining in the north of Scotland.

Close south of Preston's Tower the castle well was discovered. It is

5 feet in diameter and 19 feet deep, cradled in rubble. The well is inconveniently near to two doors in the eastern wing, than which it is probably older.



Fig. 11. Heraldic Stone found among ruins of the "Auld Tour."

Removal of the ruins of the fallen Preston's Tower has enabled a complete plan of the east wing to be made. Its middle compartment in the basement contains a vat, with a drain to the outside. The gutter which runs round the newer buildings is not continued round Preston's Tower, the walls of which are built upon a foundation of boulders. Both at the north-west and south-east corners of the tower, tusks of the early barmkin wall still remain, and portions of this wall seem to be embodied in the present outer wall of the east wing. The courtyard is neatly cobbled (see fig. 8).

The work of consolidation disclosed a number of interesting features in the sixteenth-century buildings, notably a fine carved pendant in the west window of the hall. It retains a slender iron ring which may have been used for hanging a bird cage. Among the miscellaneous carved fragments that have been found are two pieces showing that there has been a second royal coat-of-arms, as well as the one on the gatehouse. Probably this other one was on Preston's Tower.

One of the lamentable results of the dilapidation that overtook Tolquhon Castle during the last century has been the disappearance of its painted ceilings. People still living remember their last mouldering traces. All that is known of them is that the joists in some of the chief rooms were covered with scripture texts.¹ No doubt they were similar in character to those which still charm us at Crathes and Delgaty. The total destruction of these paintings is the more to be regretted, because we may be sure that so cultured and imaginative a *bauherr* as our old laird would have finished his ceilings with decorations of uncommon interest.

In the course of their operations in tidying up the old policies, the Commissioners of Works have formed a lovely lakelet on the south-east side, where formerly was an ugsome swamp, and have planted divers flowers on its banks. Out of the ruined "laich-biggings," on the

¹ *Proc. Soc. Ant. Scot.*, vol. ii. p. 343.

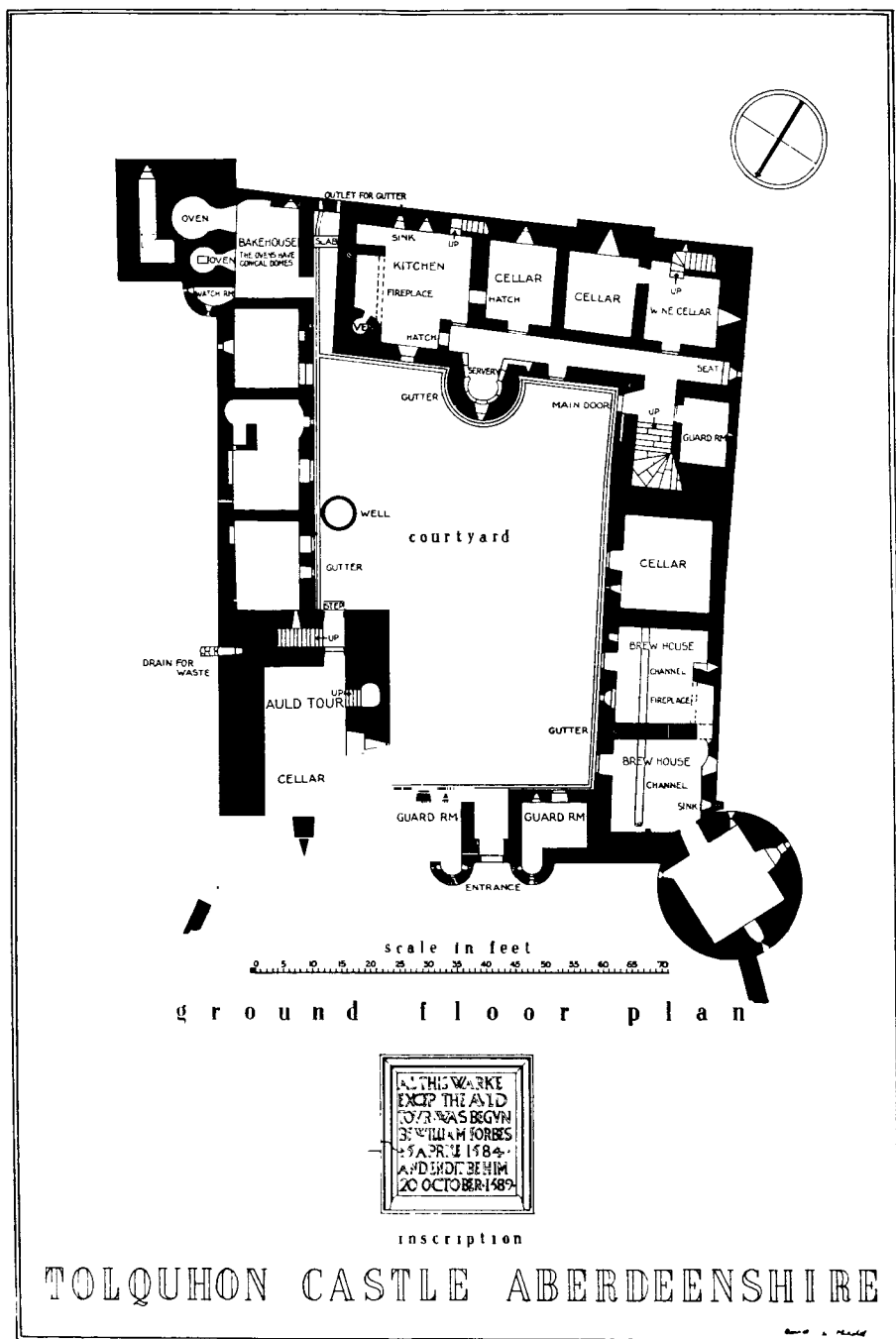


Fig. 12. Tolquhon Castle: Plan of Basement.

east side of the forecourt, a charming little keeper's cottage has been fashioned. For all these doings of the Ancient Monuments Department no praise can be too high. Thus carefully tended and shielded from all further dilapidation, the Castle of Tolquhon has become one of the most delightful, as it is certainly one of the most interesting, baronial ruins in Aberdeenshire. Only a decent road of approach is necessary for its attractions to become fully known to lovers of the picturesque and admirers of our national heritage in architecture.

I am particularly indebted to Mr David L. Medd for the admirable series of measured drawings and photographs which he has prepared for this paper. The views of the castle by Giles are reproduced by courtesy of the Council of the Third Spalding Club.

ADDITIONAL NOTE.

Since the foregoing was in type, yet another volume belonging to the erudite old laird has turned up in Aberdeen University Library. It is *De Scripturae Sanctae Authoritate, Certitudine, Firmitate et Absoluta Perfectione . . . Heinrychi Bullingeri Libri duo*, addressed to Henry VIII, quarto, Zurich, 1538. On the title page is the signature *Willeame forbes of tolquhone*, and also (twice repeated) that of an earlier owner, Alexander Arbuthnot, Principal of King's College, 1569-83.

The two volumes belonging to the late Miss Fyers have now been acquired by Aberdeen University Library.

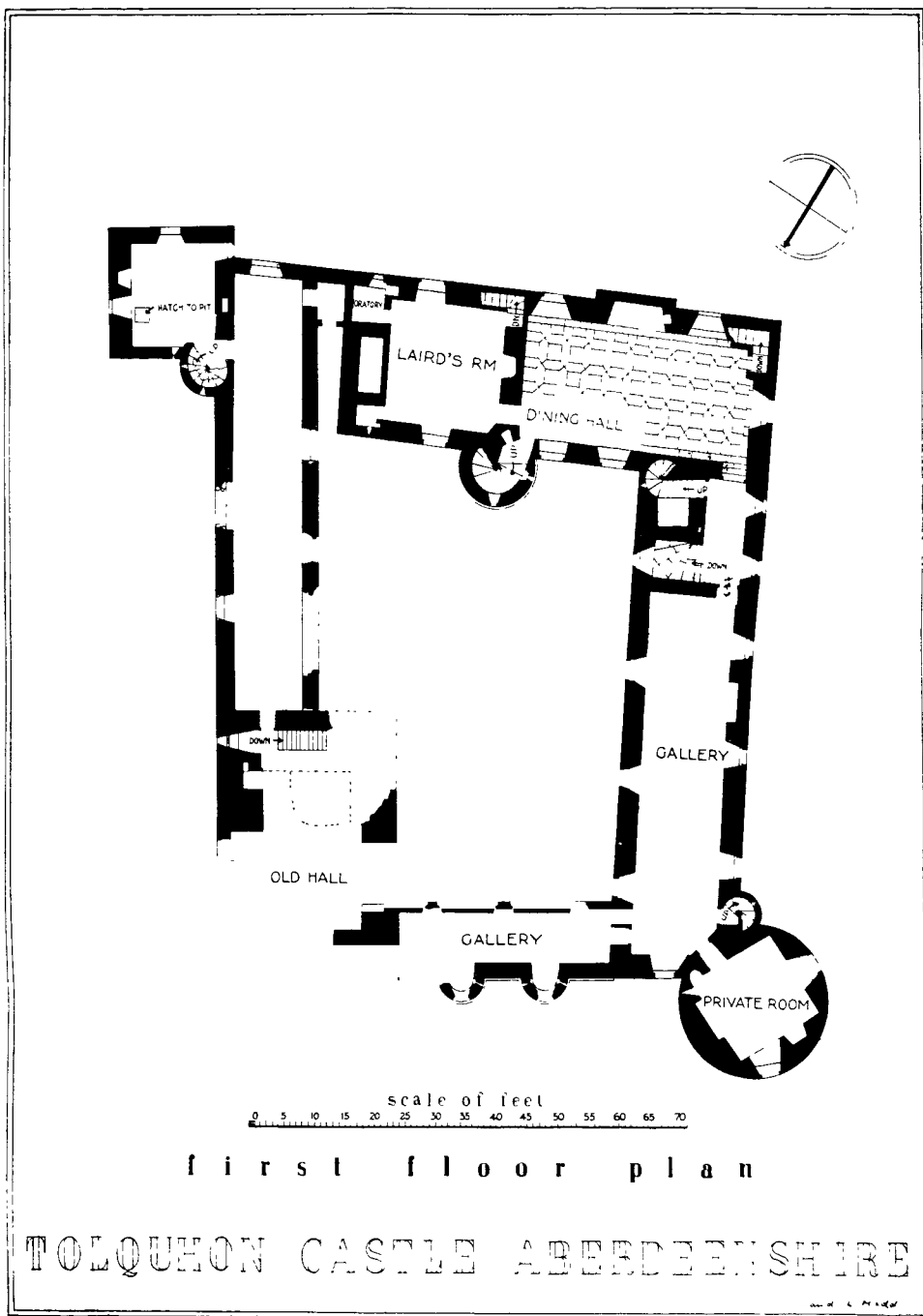


Fig. 13. Tolquhon Castle: Plan of Main Floor.

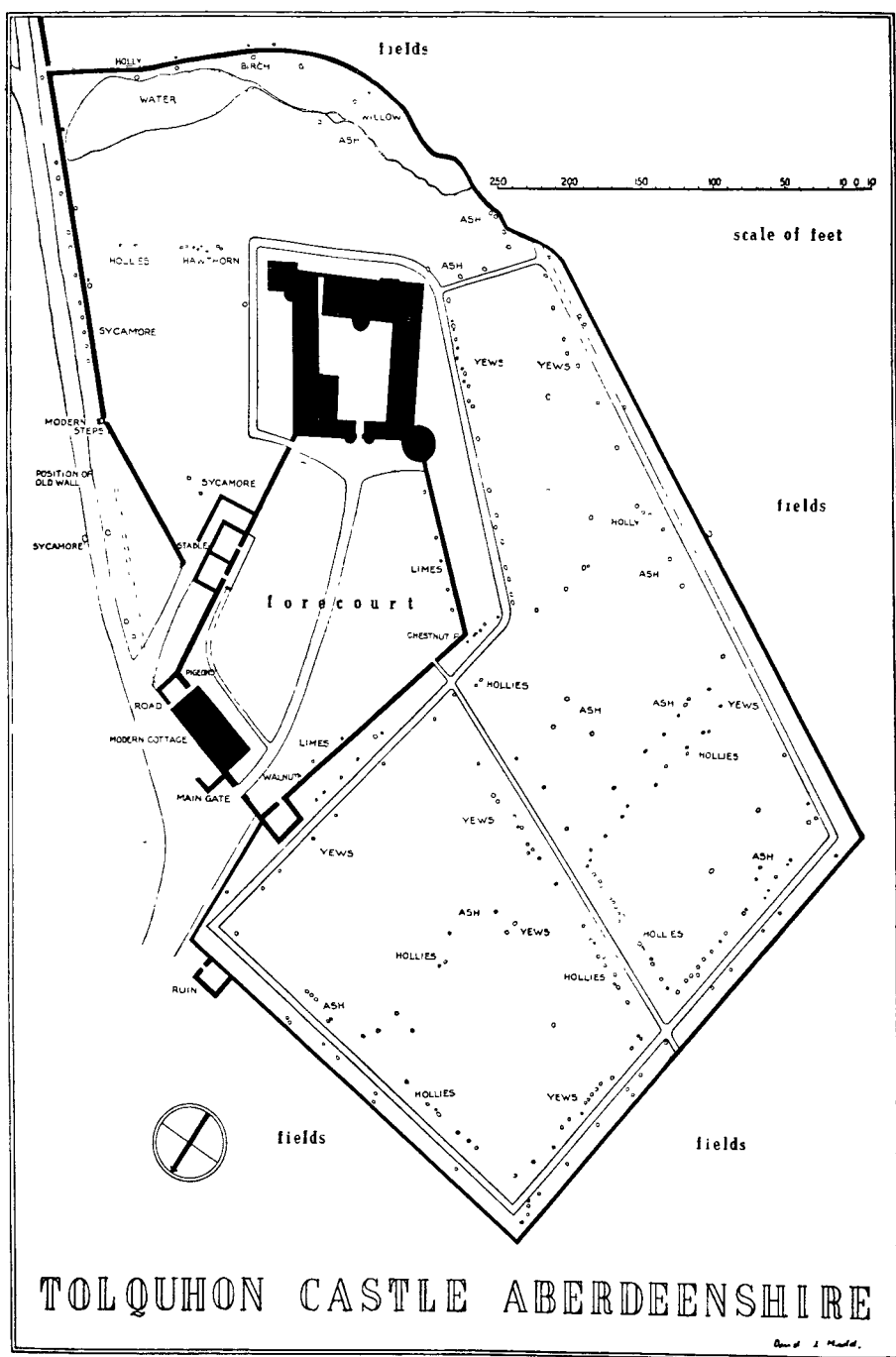


Fig. 14. Tolquhon Castle: General Plan, showing Lay-out of Pleasance.

MONDAY, 9th May 1938.

THOMAS YULE, W.S., Vice-President, in the Chair.

A Ballot having been taken, the following Candidates were elected Fellows:—

Rev. ALEXANDER HALLIDAY of Church of Scotland Livingstonia Mission, Chasefu, Lundazi, Fort Jameson, N. Rhodesia.

Rev. ARTHUR LAURENCE HARRISS, The Rectory, Great Stambridge, Essex.

The following Donations to the Museum were intimated, and thanks voted to the Donors:—

- (1) Bequeathed by The Rev. THOMAS BURNS, C.B.E., D.D., F.R.S.E., F.S.A.Scot.

Seventy-five Communion Tokens.

Two Beggars' Badges. Weem.

Beggar's Badge. St Andrews.

Chimney-Sweep's Badge. Leith.

Porter's Badge. Leith and Newhaven Ferry.

- (2) By CECIL BROOKER, through Miss HENRIETTA TAYLER, London.

Half Thistle Merk of James VI. 1603.

Pocket Mirror which belonged to David, Lord Ogilvy (1725–1803).

- (3) By THE DIRECTORS OF THE ORMISTON COAL COMPANY LIMITED.

Shovel of beech wood, found in old coal workings in the 4-foot seam at Ormiston, East Lothian.

- (4) By J. WARDLAW RAMSAY, Tillicoultry.

Fragments of a Cinerary Urn, found in a sand-pit 2 feet below the surface, half a mile east of Tillicoultry, Clackmannan.

- (5) By THE MASTER OF POLWARTH, through A. INGLES, Burlington House, Hawick.

Eighteen Flakes of cream-coloured flint, struck from one core, found 6 inches below the surface near the mouth of Harden Glen, Hawick.

- (6) By JOHN GRAHAM, Solicitor, Royal Bank Buildings, Cumnock, Ayrshire.

Wooden Spade, found in an old mineral working on the farm of Hindsward, near the village of Skares, in the parish of Old Cumnock.

(7) By JAMES S. RICHARDSON, F.S.A.Scot.

Ale Bicker from Dunblane.

(8) By Mrs ISABELLA M. CHRISTIE, Mansfield, Arbroath.

Relics from the excavation of a Stone Circle near Rig Hill, Nith Lodge, New Cumnock:—Small Cinerary Urn, Incense Cup Urn, fragments of another, and Stone Axe-hammer. (*See* previous Communication by Alex. G. McLeod, p. 241.)

(9) By ANDREW HAMILTON, Maneight, New Cumnock, Ayrshire.

Relics from the excavation of a Bronze Age Burial Site at Beoch, New Cumnock, Ayrshire:—Fragments of a Beaker, fragments of Cinerary Urns, and a Ring Marked Stone. (*See* previous Communication by Alex. G. McLeod, p. 235.)

The following Donations to the Library were intimated, and thanks voted to the Donors:—

(1) By HIS MAJESTY'S GOVERNMENT.

Ancient Monuments of Great Britain. List of Monuments (to 31st December 1937) prepared by the Commissioners of Works. London, 1938.

(2) By Sir GEORGE MACDONALD, K.C.B., LL.D., President.

The Roman Pottery Kilns at Little London, Torksey, Lincs. By Adrian Oswald, M.A. Shirebrook, 1937.

(3) By Professor H. DRAGENDORFF, Hon. Fellow, the Author.

Georgine Juhász: Die Sigillaten von Brigetio. Reprint from *Gnomon*, Vol. 14, Part 2, February 1938.

(4) By A. J. H. EDWARDS, F.S.A.Scot.

University of London Institute of Archaeology. Catalogue of an Exhibition of Recent Archaeological Discoveries (1933–1938) in Great Britain and Northern Ireland, March–May 1938.

(5) By RAMSAY TRAQUAIR, School of Architecture, McGill University, Montreal.

Montreal and the Indian Trade Silver. Reprinted from *The Canadian Historical Review*, March 1938.

The following Communications were read:—

I.

EXCAVATIONS AT BIRRENS, 1936-1937. BY ERIC BIRLEY, M.A.,
F.S.A.Scot., F.S.A., WITH CONTRIBUTIONS BY I. A. RICHMOND,
M.A., F.S.A.Scot., F.S.A., J. A. STANFIELD, AND W. PERCY
HEDLEY, F.S.A.

In presenting this report ¹ I may be allowed to express my thanks to my collaborators. Mr I. A. Richmond paid a visit, which proved most instructive, to the excavations of 1936, shared in the direction of the work undertaken in the following season, and has contributed the sections of this report which describe the rampart of the fort and its water-supply, besides giving general help with the sections for which he is not directly responsible: Mr Richmond undertook the surveying of the

¹ The following abbreviations are employed:—

- AA³⁻⁴ . . . *Archæologia Æliana*, 2nd-4th series.
CIL . . . *Corpus Inscriptionum Latinarum*.
CW² . . . *Transactions*, new series, of the Cumberland and Westmorland Antiquarian and Archæological Society.
Fölzer . . . E. Fölzer, *Die Bilderschüsseln der ostgallischen Sigillata-Manufakturen*, Bonn, 1913.
Hofheim . . . E. Ritterling, *Das frühromische Lager bei Hofheim i. T.*, Wiesbaden, 1913.
JRS . . . *Journal of Roman Studies*.
Niederbieber . . . F. Oelmann, *Die Keramik des Kastells Niederbieber*, Frankfurt a.M., 1914.
NMA . . . National Museum of Antiquities.
O. . . F. Oswald, *Index of Figure-types on Terra Sigillata*, Liverpool, 1936-1937.
ORL . . . *Der obergermanisch-rätische Limes des Römerreiches* (Reports of the German Limes Commission).
PSAS . . . *Proceedings of the Society of Antiquaries of Scotland*.
Ricken, Saalburg . . . H. Ricken, *Die Bilderschüsseln der Kastelle Saalburg und Zugmantel*, in *Saalburg Jahrbuch*, viii., 1934.
RWS² . . . Sir George Macdonald, *The Roman Wall in Scotland*, second edition, 1934.

Well-known excavation reports are indicated by the name of the site *in italics*; it will be convenient to give further references here to those sites which have been reported upon in AA or CW:

- AA³, viii. . . *Corbridge*, 1911.
AA⁴, vii. . . *Denton Hall turret, Chapel House milecastle*.
AA⁴, xv. . . *Corbridge*, 1938.
CW², xi. . . *Poltross Burn milecastle*.
CW², xiii. . . *High House milecastle, Birdoswald, High House, and Appletree turrets, Throp fort*.
CW², xxx. . . *Birdoswald fort*.

structures examined in 1937, and has also drawn the figure illustrating the two west gateways, found in 1895 and 1936 respectively. Mr J. A. Stanfield, besides drawing most of the decorated Samian ware and the bronzes, has contributed valuable notes on the most interesting of the former material; and Mr W. Percy Hedley has provided notes on the coins. During both seasons Mr W. L. George, B.A., assisted in the direction of the excavations, and he has given considerable help in the examination of the pottery; I have had the benefit of consulting Mr F. G. Simpson, Hon. F.S.A.Scot., in connection with some of the latter material. Mr R. C. Reid undertook the business arrangements, and saw to it that the work to be detailed presently should not be curtailed for lack of funds or labour; and Thomas Batey, my foreman, showed himself equally competent as an excavator and as a trainer of the local men whom we employed.

I. INTRODUCTION.

The original excavations at Birrens in 1895¹ aimed at proving the Roman date of the visible defences and securing as complete a plan as possible of the interior arrangements of the fort; and both objects were attained, with a success all the more noteworthy because of its stimulating influence on the development of scientific excavation elsewhere. Furthermore, considerable incidental light was thrown on the history of Birrens in Roman times, not merely by the inscriptions, coins, and other relics found, but by the discovery of evidence for a drastic rebuilding of the fort after a violent destruction. But no attempt was made to discover whether the two structural periods between them accounted for the whole or only a part of the occupation of Birrens by the Romans; and, with pottery not yet established as a means of dating, there was no guide other than that provided by the inscriptions and coins to the time when the fort was first built or to the total length of the occupation. Among the inscriptions, only one was directly dated, to A.D. 158,² and none could be shown to be earlier or later than the second century; the brief coin list gave no cause to assume an occupation antecedent or subsequent to that century;³ and it seemed to follow that the history of Birrens must have been similar to that of any Antonine fort in Scotland, established before the middle, and finally abandoned before the end, of the second century.

But as time went on it became clear that Birrens could not be placed

¹ PSAS, xxx., 1896, pp. 81-199; reprint, pp. 1-119.

² *Ephemeris Epigraphica*, ix. 1230 (correcting the reading given in PSAS, xxx. p. 129).

³ Cf. PSAS, lii., 1918, p. 217.

in the same category as Newstead or the forts of the Antonine Vallum. The historical attribution of the different structural periods at Newstead can hardly be settled without further digging,¹ and here we must confine ourselves to noting the mere fact that they outnumbered the two periods at Birrens. But excavation in the forts of the northern *limes* regularly produced three periods attributable to the occupation inaugurated by Lollius Urbicus, and it became clear that the discrepancy could only be explained in one or more of three ways: (1) Birrens had been occupied for a shorter period than the other forts; *a priori* this was not a likely suggestion. (2) It had succeeded in escaping one of the destructions which overwhelmed the forts farther north; this possibility was clearly strengthened by the results, to be referred to later, obtained by excavation at Risingham and High Rochester. (3) The two periods noted in 1895 represented a part only of its occupation; I will show presently that this explanation seemed certain to me, but I must first deal briefly with a different reading of the evidence, which was largely the cause of my undertaking excavation at Birrens.

In the concluding chapter of the second edition of his *Roman Wall in Scotland*, Sir George Macdonald, adopting the second of the above explanations, made his interpretation of the evidence from Birrens a touchstone for the vicissitudes of the Antonine frontier. His argument may be summarised thus:² The inscription of A.D. 158, already referred to, must belong to the second of the two observed periods, for the circumstances under which it was found showed that it was still in position when Birrens was deserted for the last time; there was no break in the occupation of the site between that date and the final destruction of the fort; and the archaeological evidence showed that the site had lain derelict after *circa* A.D. 196. *Ergo*, Birrens (like Hadrian's Wall) had escaped the disaster which overwhelmed the Antonine Vallum in the early years of Commodus; and if it was not occupied later than A.D. 196, the Antonine Itinerary, in which one route has Birrens as its northern terminus, must be assigned to the time of Commodus at latest; and the absence from it of the forts farther north showed that they, and the Antonine Vallum, must already have been abandoned under that emperor.

This is not the place to discuss the wider question as to the history of the Roman Wall in Scotland, though the sequel will show that my interpretation of the evidence differs widely from Sir George Macdonald's; but it is necessary to set forth the reasons which led me to reject the

¹ Cf. Dragendorff's acute observations in JRS, i., 1911, p. 135.

² RWS², p. 478.

above interpretation of the evidence from Birrens, and to initiate the recent excavations there in order to prove my point.¹

In the first place, I concurred in thinking that Birrens had escaped the disaster of *circa* A.D. 180, because its position suggested that Birrens should be regarded as an element in the Hadrianic frontier rather than as a link in the Roman occupation of Scotland. The accompanying sketch-map (fig. 1) will serve to emphasise the close similarity between its position and that of Netherby or Bewcastle in relation to Hadrian's

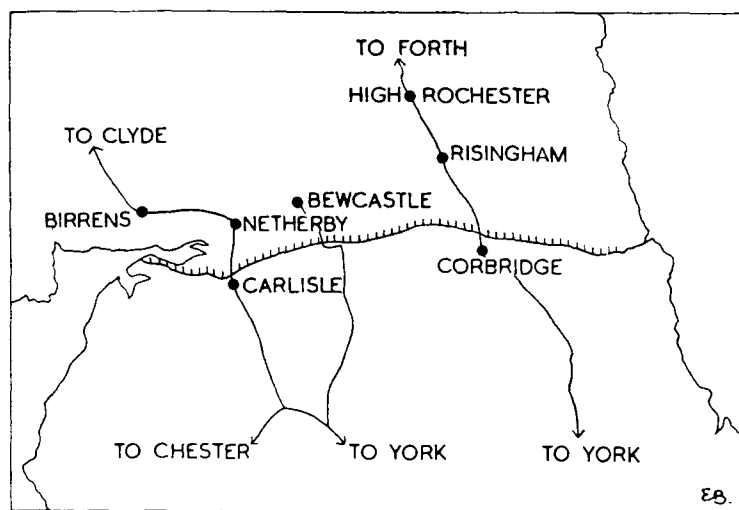


Fig. 1. Hadrian's Wall and its outliers.

Wall, and those forts are known by inscriptions² to have been established by Hadrian. The three forts form a screen, thrust forward eight or nine miles beyond the Wall, into an area where archæology suggests that there was then a considerable native population. There has been no scientific excavation at Netherby, and Bewcastle did not receive attention until 1937,³ but Mr Richmond's excavations at Risingham and High Rochester in 1935⁴ showed that both forts had escaped the destruction which overwhelmed the Antonine Wall in the time of Commodus; and if they escaped, it seemed unlikely that the nearer outliers in the west, less easily accessible from the northern *limes*, should have been affected.

¹ A preliminary outline of the views here set forth was given in a review of RWS² in *Proceedings of the Society of Antiquaries of Newcastle-upon-Tyne*, 4th series, vi. p. 281 (1934); cf. also *Dumfriesshire and Galloway Transactions*, xx. pp. 157-170, from which the following discussion has been expanded.

² CIL, vii. 961, Netherby; 978, Bewcastle.

³ Cf. CW², xxxviii. pp. 195-237.

⁴ AA⁴, xiii. pp. 170-198.

But the evidence from High Rochester seemed even more apposite to the study of Birrens, because until 1895 no Roman site in the north of Britain had been so completely examined. As in the case of Birrens in 1895, High Rochester, in the middle of last century, was examined with a view to obtaining a plan of its interior arrangements, and the excavators distinguished traces of two distinct periods of occupation, which could be matched with building-inscriptions of two periods, Antoninus Pius¹ and the early years of the third century.² But Mr Richmond has been able to show that, in place of the two periods revealed by the previous excavations at High Rochester, there were as many as five, the last of which must be assigned, on the evidence of pottery, to the early years of the fourth century. That seemed to justify the presumption that further digging at Birrens would reveal more than the two periods distinguished in 1895, especially when it was remembered that in 1895 it was not yet a commonplace that the Roman occupation of the north of Britain was subdivided into so many distinct periods. And the fact that excavations or chance finds had shown the other outliers—High Rochester, Risingham, Bewcastle, and Netherby—to have continued in Roman hands, not merely throughout the third century, but well into the fourth,³ seemed to justify the suspicion that Birrens had not been left unoccupied after the destruction of A.D. 196.

When I turned to consider the evidence from Birrens itself, it seemed to show that my suspicion was justified. It had been demonstrated, indeed, that the gold coin of Constantius Chlorus recorded from there has no necessary connection with the presence of the Romans at Birrens, since it had seen long use as an amulet;⁴ and the cut-glass beaker, for which a late date had at first seemed certain, might well have reached the site at a considerably earlier time.⁵ But among the inscriptions there were three which, though they are not dated, should belong to the third century rather than the second, namely, two dedications to Mercury by a college of his worshippers⁶ and the altar set up by the architect Amandus in honour of Brigantia.⁷ The attribution of the latter altar to the third century has been confirmed by Mr S. N. Miller's convincing identification of the dedicator with the Valerius Amandus attested on a German inscription of A.D. 208,⁸ and the style of the two altars to Mercury clearly best fits such a date: the complicated ligatures on one of them and the abbreviation of a rare *nomen* to its first three letters on the other cannot lightly be ignored. Furthermore, an examina-

¹ CIL, vii. 1041.

² CIL, vii. 1043, etc.

³ Cf. Birley, *Three Notes on Roman Cumberland*, in *CW*², xxxi. pp. 137-147; Richmond, *AA*⁴, xiii. *cit.*

⁴ *PSAS*, lii. p. 219.

⁵ *Ibidem*, and *cf.* p. 335 below.

⁶ CIL, vii. 1069 and 1070.

⁷ CIL, vii. 1062.

⁸ *JRS*, xxvii. pp. 208-209.

tion of the 1895 plan suggested that it retained evidence of more than two structural periods, and that the inscription of A.D. 158 could not be associated with the last of them.

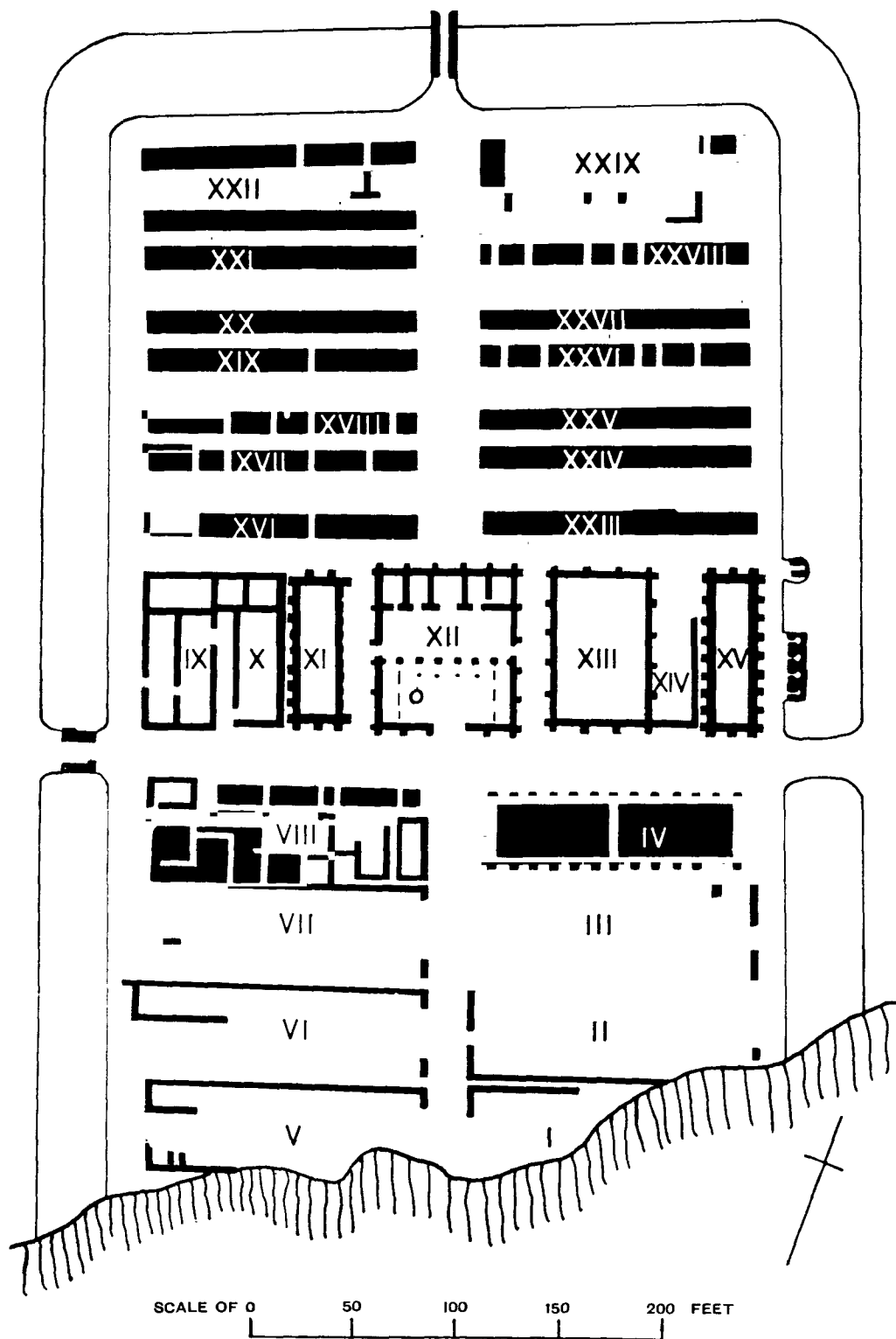
In the central block of buildings, Sites IX–XV, the plan only presents two structural periods—"primary" shown in black and "secondary" in blue; but when the "secondary" walling is eliminated, as in fig. 2, it will be seen that there is still more than one period represented, for the buildings numbered X and XIV plainly interfere with the symmetry of the block. Site X makes an extremely awkward junction with IX, and leaves no room even for pedestrian traffic on the west side of the Granary XI; Site XIV is an obvious addition to XIII, and similarly blocks access to the street which must originally have run between XIII and the Granary XV; and the 1895 plan shows "secondary" walling overlying part of XIV. If we eliminate these intrusive structures, we obtain the intelligible arrangement of five buildings shown on the accompanying fig. 3: in the centre is the *principia*, Site XII; to the east of it are the *prætorium*, Site XIII, and a granary; to the west the *quæstorium*, Site IX, and another granary. And an accidental discovery from elsewhere allows the suggestion that this arrangement should be assigned to the re-occupation of Birrens attested by the inscription of A.D. 158.

A military diploma discovered at Eining in Bavaria shows ¹ that in A.D. 147 a vexillation of the second cohort of Tungrians was serving in the province of Raetia, and a comparison with the Raetian diplomas for 153 and 157 suggests that the detachment only returned to Britain between those two dates. It seems clear that, for some reason, half of the regiment had been transferred for a time to strengthen the garrison of Raetia, where it counted as an independent *cohors quingenaria*; and while it was on duty there some of the men in it became due for discharge from the army, on the completion of their twenty-five years with the colours, and so it came to be included in the diploma which set forth the grant of the privileges customarily accorded to the soldiers qualified for honourable discharge, and named the regiments in the province which had men so qualified. One consequence was, that the gaps in its ranks had to be filled by the enrolment of fresh recruits enlisted, as was usual in this period, in the province where the unit was serving, namely Raetia. That explains the occurrence, on an altar found at Birrens, of *c(ives) Raeti milit(antes) in coh(orte secunda) Tungrorum*.² Recalled from Raetia when it was necessary for the cohort to occupy the milliary fort

¹ CIL, xvi. 94; cf. Birley, *A Note on the second cohort of Tungrians*, in *CW*², xxxv. p. 56 *et seq.*

² CIL, vii. 1068.

BIRRENS - PRIMARY STRUCTURES



E. B. AFTER J. BARBOUR

Fig. 2.

of Birrens at full strength, the detachment brought with it these new recruits. But it seems to have brought with it something else as well.

There is a remarkable feature about the central block of buildings at Birrens: not only the granaries, but also the *principia* and the *praetorium* are provided with frequent external buttresses (cf. fig. 3) of slighter construction and more widely spaced than in the granaries, in which it is usual to find buttresses provided. But the case is quite different with regimental headquarters and commandants' houses; we know of no other fort in Britain where such buildings are treated in this way, but in Raetia there are several instances.¹ It seems difficult to escape the conclusion that the exceptional treatment of these two buildings at Birrens was a by-product of the half-cohort's period of service in Raetia, and that the inscription of A.D. 158 was set up in the first of the three

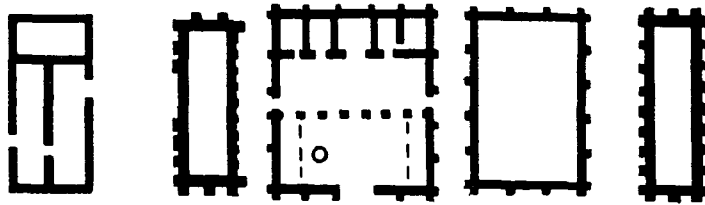


Fig. 3. Central block, original state.

periods which the plan allows us to distinguish in the central block of buildings.

It has been argued, indeed, that the circumstances under which that inscription was found show that it was still in position when Birrens was deserted for the last time, and that therefore it must have been set up when the *principia* was rebuilt, not when it was originally constructed.² But that argument will not survive a critical examination. The discovery is recorded in the following terms:³ "Some of these fragments were found near, others in, the well that was discovered within the area of the" *principia*. In other words, the pieces were lying in the courtyard of the building; but if the inscription had been still in position when the fort was abandoned, its fragments should have been found fallen upon the street to the south of the *principia*, for its original position must have been in the front of that building, where it could be seen by people approaching from the *porta praetoria*. It can only be concluded that the inscription had been re-used, as was often the case, as a flag or flags in the paved courtyard. Analogies are not far to seek. It will

¹ ORL, 61a (Sulz), 64 (Schierenhof), 66a (Urspring), 68 (Ruffenhofen), 70 (Gnotzheim). Cf. also 2a (Niederberg) and 44 (Murrhardt) in Germania Superior.

² RWS², p. 478.

³ PSAS, xxx. p. 129.

be sufficient to refer to the fragments of the inscription recording the erection of the *principia* at Rough Castle, found "in a hole among other debris" in the courtyard of the headquarters building there,¹ and to the dedication to Antoninus Pius from the well in the *principia* at Bar Hill;² for on any interpretation of the three Antonine periods on the northern *limes* neither of these inscriptions can have been set up at the opening of the third and last occupation: indeed, though neither stone is dated, there can be no doubt that both were set up at the time of the erection of the two forts in the governorship of Lollius Urbicus.

To sum up: it seemed clear that there were at least three structural periods represented in the remains planned in 1895, and that the first, not the last of them, must be associated with the inscription of A.D. 158; and further, that the fort was not finally abandoned at the close of the second century, but was re-occupied in the third.

It happened that the Dumfriesshire and Galloway Archaeological Society paid a visit, in the summer of 1935, to my excavations at Chesterholm, and I had occasion to discuss the problems of Birrens with its president, Mr R. C. Reid: he at once suggested that that Society should raise a fund large enough to allow of a trial excavation, and invited me to superintend the work. Permission to dig was readily granted by Mr and Mrs James Mackie, the proprietors, and the excavations took place in August 1936: their object was restricted to a fresh examination of the stratification, to discover what the total number of structural periods had been and, by applying increased knowledge of pottery evidence, to see whether I was justified in inferring for Birrens a history similar to that of the other outliers of Hadrian's Wall.

The results, described in the following section of this report,³ were striking. As many as five structural periods were found, and although there was very little stratified pottery there was enough to suggest a provisional dating of those periods: (1) to the time of Agricola; (2) and (3) to the second century; (4) to the third; and (5) to the beginning of the fourth. But it seemed essential to secure a larger series of pottery in order to provide a surer correlation of the five periods with the history of the Roman occupation, and there were several problems raised by an incidental examination of the rampart and gateways of the fort which called for fuller examination. I was fortunate enough to persuade Mr I. A. Richmond to join me in the direction of this further excavation, which took place in July 1937, with the aid of generous grants from the

¹ RWS², p. 228.

² RWS², p. 279.

³ A preliminary report appeared in *Dumfriesshire and Galloway Transactions*, xx, pp. 157-170; reprint, pp. 1-14.

Council of this Society and from the Trustees of the Haverfield Bequest, as well as fresh contributions from members of the Dumfriesshire and Galloway Society.

In the event, a full enough range of pottery was obtained to give a definite answer to the problem that had taken us to Birrens, and a great deal of light was shed on the structural history of the rampart; in addition, fresh problems arose, not all of which could be solved before the second season's work came to a close, and some day it will be necessary for further work to be undertaken, to complete the investigation of the points which still remain obscure. But as we are now in a position to answer the original question, it seems an appropriate time to lay before this Society a report on the work done in 1936 and 1937.

II. THE EXCAVATIONS OF 1936.

The first season's work comprised examination of the stratification on two sites, the west end of XIX in the *retentura* and part of VIII in the *prætentura* of the fort; the cutting of a section through the west rampart, opposite Site XIX; and a partial re-examination of the north and west gates. The last-named operations were disappointingly inconclusive. In the first instance we cut trenches in the gateways merely to allow us to pick up points from which we could measure off the position of Site XIX, which we had selected for particular attention because the 1895 plan showed that a minimum of digging had been done there in that year. But it soon became clear that the gateway structures planned in 1895 had been wholly removed after the planning of them had been completed. At the north gate we were unable to find any masonry in position, and a fuller examination in 1937 was hardly more successful; but at the west gate we did succeed in finding a gateway, though it was not the one found and planned in 1895.

The West Gateway.—The accompanying diagram (fig. 4) gives an enlargement from the 1895 plan, together with a plan, to the same scale, of the gateway that we found in 1936. The difference is not merely one of dimensions, but of materials. The 1895 gateway is described as being of good masonry, "the stones, of various sizes but generally small, being squared, and well fitted in bonded courses";¹ in contrast to this, the masonry found in 1936 was rough in the extreme and seemed a complete puzzle, until Mr Richmond explained it convincingly as the rubble filling of a timber framework. Originally the gate-passage must have been about 18 feet long, with four upright beams recessed into each

¹ PSAS, xxx. p. 103.

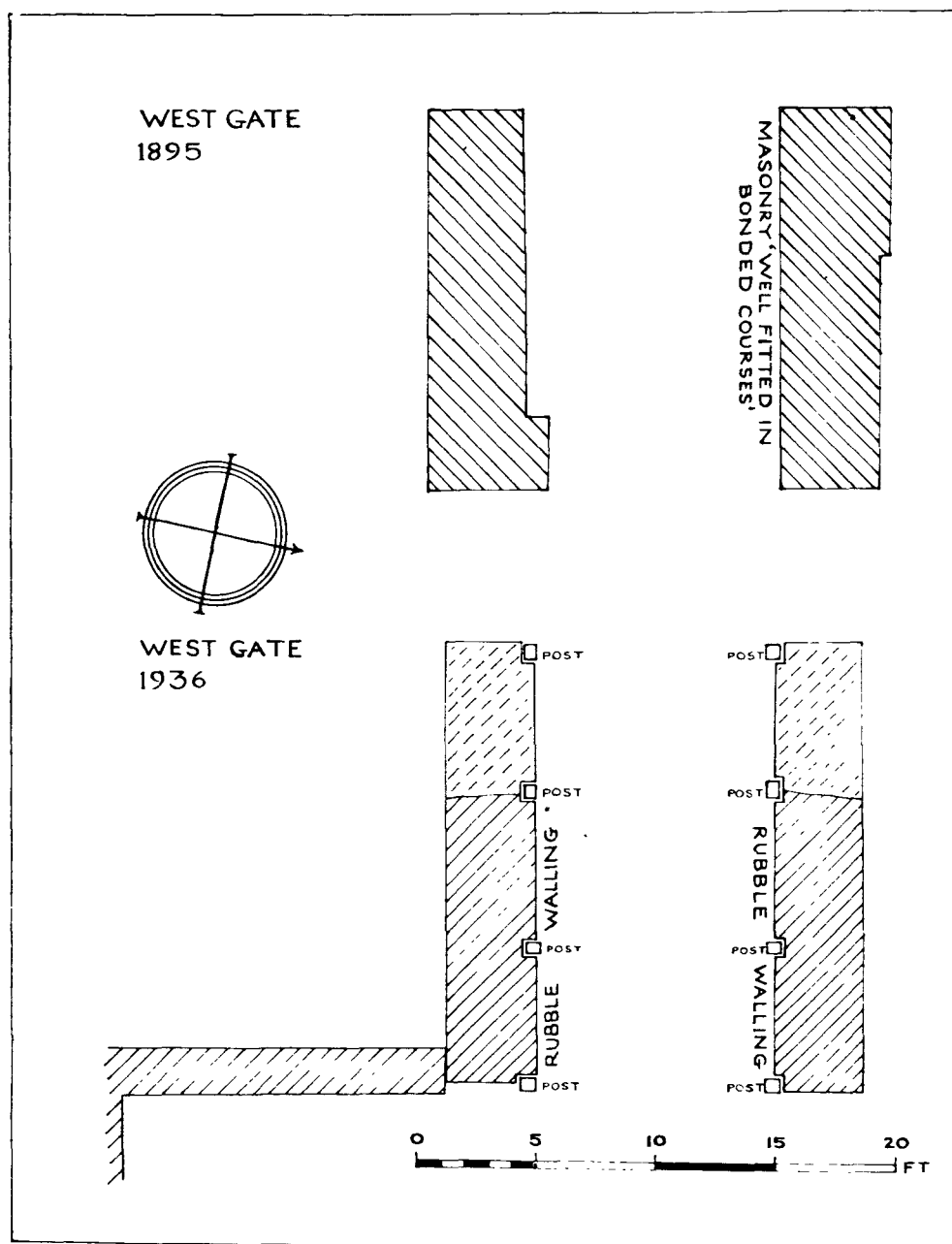


Fig. 4.

side at the ends and at one-third and two-third intervals; the outer third has been wholly removed by stone-robbers or excavators. Extending southwards from the inner end of this gate-passage was a narrow wall, which returned eastwards at 14 feet; within the angle so formed was a hearth, and it is conceivable that we have here the remains of a guardroom attached to the inner side of the rampart; but we did not complete the examination of this area, which will have to receive attention on another occasion. It will be remembered that a somewhat similar structure was found in the same position relatively to the "secondary" north gate in 1895,¹ but we did not succeed in establishing the relationship between the 1936 west gateway and any of the levels found elsewhere in the fort, and the date of this timber and rubble gateway remains a matter for conjecture. We were careful to leave the northern side untouched, so that the connections between passage-wall, turf rampart, and internal levels can still be established.

It will be convenient to describe the section cut through the west rampart, farther north, opposite Site XIX West, after recording the results obtained on that site and Site VIII.²

Site XIX West.—Fig. 5 gives a record-plan of the structures found on this site, together with separate plans for each of the stone buildings; notes follow on each of the five structural periods.

Level I.—Four post-holes, insufficient to indicate any plan, and a short length of sleeper-trench, comprise the whole of the evidence on this site for an original timber building; there was only one piece of pottery at this level—part of the flange of a Samian bowl of Curle's type 11 (fig. 26, 1 below), which might be as late as the time of Hadrian.

Level II.—The first stone building had a doorway (whose width we did not ascertain) in its south wall, 15 feet from the west end; there was a small patch of flagging inside that wall and in the doorway itself (*cf.* fig. 8), but otherwise the floor was of clay, spread over and securely sealing the post-holes of Level I. The only pottery from this level is illustrated below (fig. 26, 2 and 3); it appears to belong to the period A.D. 120–160.

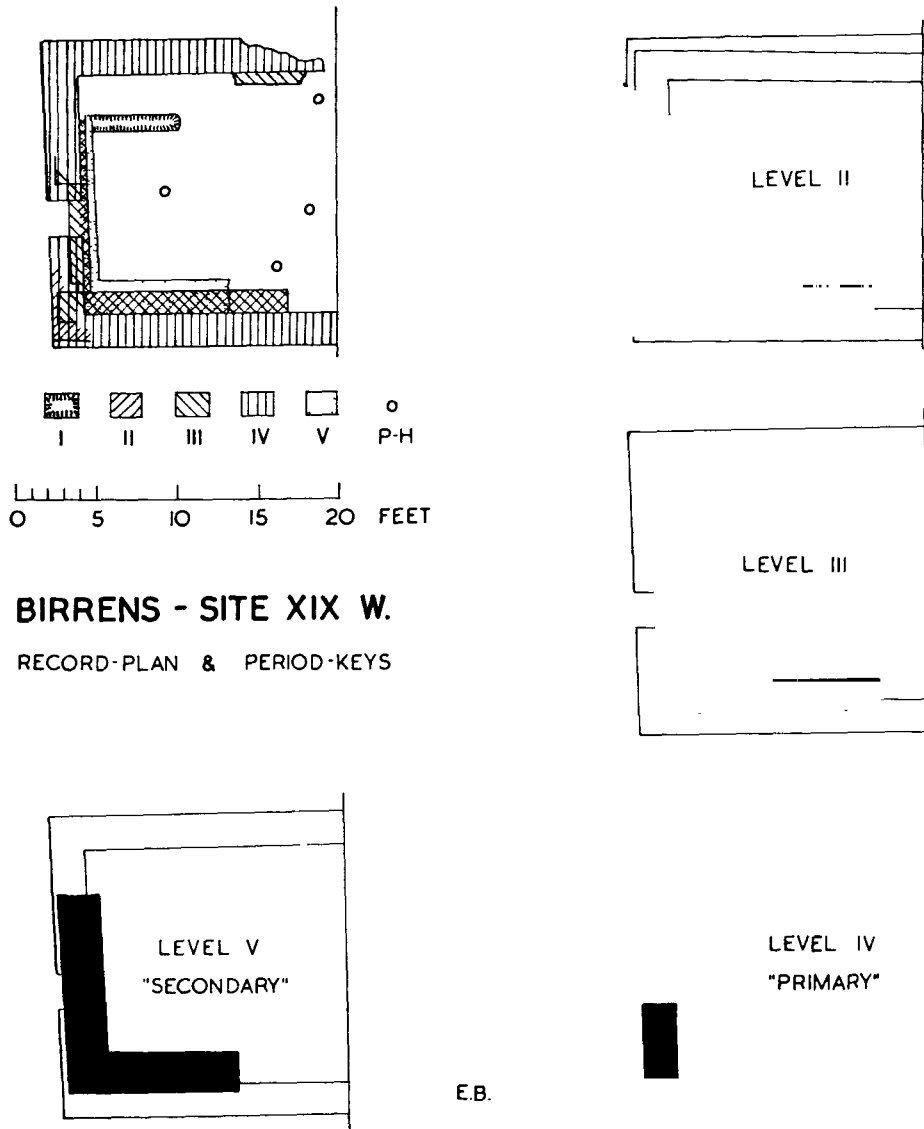
Level III.—As reconstructed, the building now had rather thinner walls. In addition to the original doorway in the south wall, which was retained in use, a doorway 6 feet 6 inches wide,³ with a flagged threshold which showed signs of considerable wear, was inserted in the west wall (*cf.* fig. 9); there was a rather larger area of flagging, and a large flag

¹ PSAS, xxx. pl. iii., facing p. 102.

² Below, p. 293; *cf.* also pp. 302–306.

³ *Cf.* the 10-foot doorway in the stables at Halton, AA⁴, xiv. p. 164.

serving as a threshold in the south doorway, about 6 inches above the floor of Level II (*cf.* fig. 7). No pottery was found at this level.



E.B.

Fig. 5.

Level IV.—In this period a new building was erected, on the same general lines as its predecessor but not on the same foundations; the

south wall of the new building was almost wholly south of that of Level III, which was mainly covered by the flags of the new floor (fig. 6,

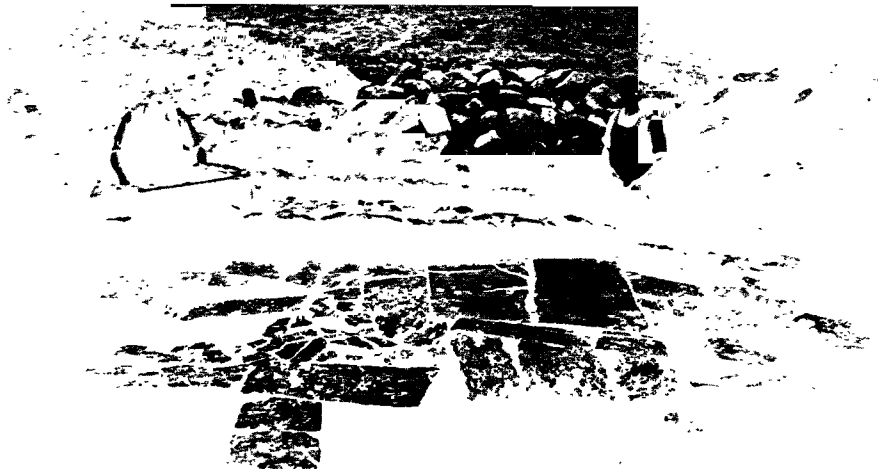


Fig. 6. Site XIX West: flagging and south wall of Level IV.



Fig. 7. Site XIX West: flagging and south wall of Level III.

and *cf.* figs. 7 and 8). There was no longer a doorway in the south wall, and only a narrow one at the west; nearly half the floor-space was now

flagged (fig. 6). There was no occupation-deposit of pottery, but from

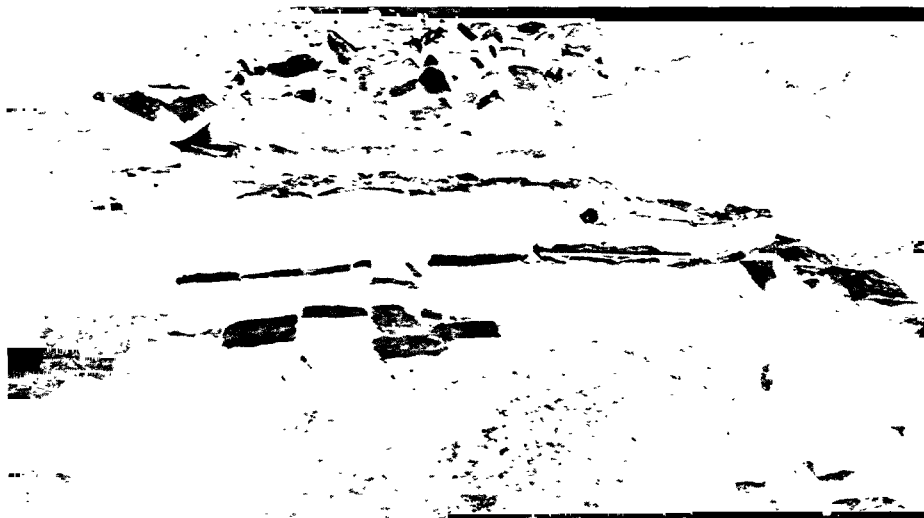


Fig. 8. Site XIX West: flagging and south wall of Level II.

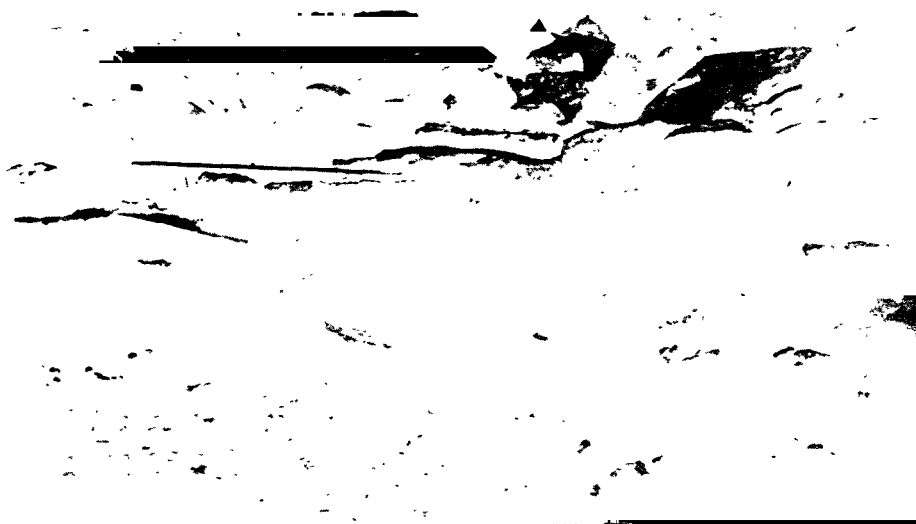


Fig. 9. Site XIX West: inner face of west end, showing remains of Level II wall covered by Level III threshold and two courses of Level IV walling.

among the debris overlying the floor came the outbent cooking-pot rim (fig. 26, 4), which can hardly be earlier than the close of the third century.

Level V.—The 1895 plan shows the south-west corner of a “secondary” building overlying the “primary” walls of this site; the latter are clearly those of our Level IV; but no traces of this later structure were found surviving in 1936. As we were to find elsewhere at Birrens, the remains had been badly robbed after their planning had been completed. In fig. 5 the walls of this level have been plotted in by enlargement from the earlier plan.

The scarcity of pottery inside this site was in part compensated for by the discovery of two vessels, securely stratified, in the alley-way to the north of it. One of them, a jug, had been deposited in the alley at Level III, most of it being covered by the north wall of Level IV, which had to be removed before all the pieces could be secured: the other, a large mortarium, came from the same level, but further to the east, where the wall of Level IV had been wholly destroyed. Both pieces are illustrated in fig. 27 below; they appear to belong to the close of the second century, and thus give a useful *terminus post quem* for the beginning of the period represented by Level IV.

Such as it was, then, the stratified pottery from Site XIX West allowed the following provisional dating of the successive periods:—

Level I, timber building: Hadrian at latest ¹ (Samian bowl, Curle, 11).

Level II, first stone building: A.D. 120–160 (platters best paralleled on Hadrian’s Wall in that period).

Level III, second stone building: A.D. 160–200 (jug and mortarium, broken at the end of the period, assignable to *circa* 200).

Level IV, third building: A.D. 200–300 (cooking-pot, in overlying debris, assignable to *circa* 300).

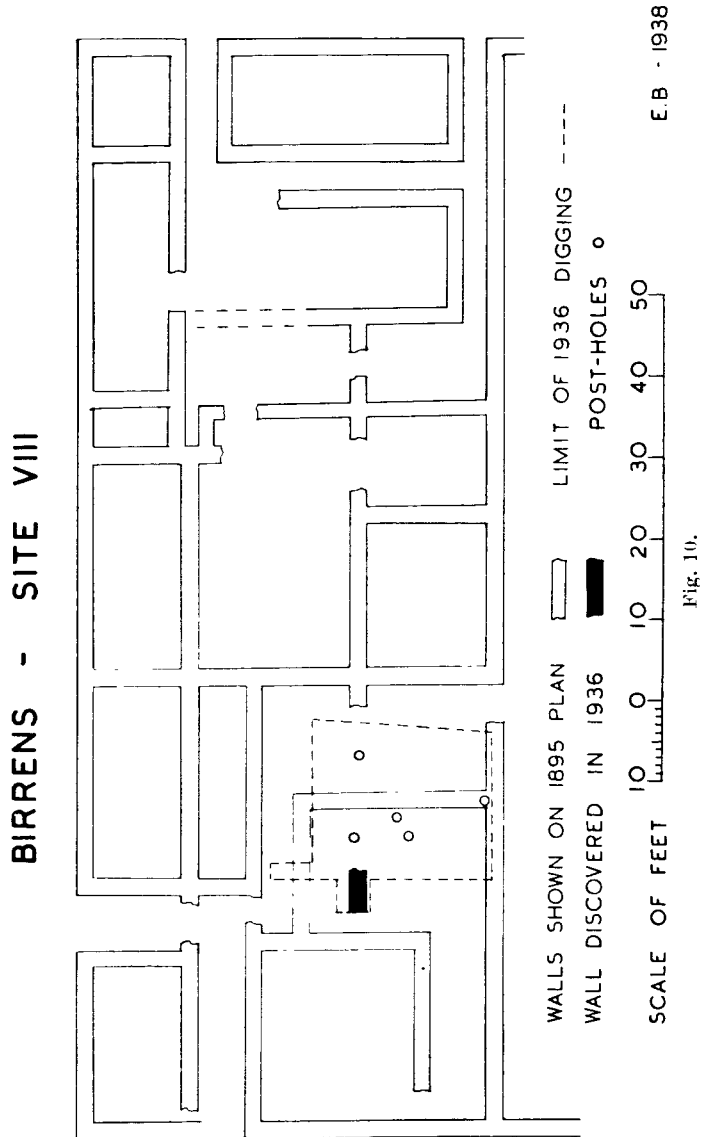
Level V, fourth stone building: A.D. 300 onwards.

But it was clearly desirable to obtain a more extensive series of pottery, and accordingly attention was transferred to Site VIII in the *prætentura*, where the surface indications promised reasonably intact stratification and analogies suggested that we should find buildings that had been occupied as barracks, rather than the stables which seem to be represented by the structures on Site XIX.

Site VIII.—Here the 1895 plan makes no distinction of periods in a complex of walls, in which it is at first difficult to see any satisfactory indication of a coherent plan. But as soon as the possibility of more than one period being represented is entertained, the problem becomes

¹ In the preliminary report it was assumed that this level belonged to the period of Agricola, because of the presence of a pre-Hadrianic rim in the series of material from Birrens preserved in the Dumfries Museum; but in view of the discoveries made in 1937 it seems wiser to suspend judgment on this point (*cf.* p. 345 below).

less acute. Fig. 10 is an enlargement of that plan, on to which the excavation of 1936 is also plotted. A study of the plan suggests (1) that



at the east end we have a series of independent huts, separated from each other by narrow alley-ways, as in the Constantian barracks at
VOL. LXXII.

Birdoswald and High Rochester; and (2) that in the first instance the site was occupied by two long and narrow barrack buildings, separated by a street (*cf.* fig. 11) whose outline may still be discerned in spite of extensive rebuilding, which has involved the disappearance of the street and the partial obliteration of the original plan.¹

The small portion of the site reopened in 1936 was chosen more for its promise of stratification than for the possibility that it might throw light on the structural changes suggested by a study of the published plan; but it proved to contain evidence in support of our second inference, for a fragment of wall, not shown on that plan, was found in westward continuation of what we have taken to be the northern wall of the original southern barrack (fig. 10), and that wall proved to be earlier by two structural periods than the one parallel to it and about



Fig. 11. Conjectural first lay-out of Site VIII.

6 feet farther north; for the latter's foundations rested on a cobbled roadway, which extended over the remains of the former. This was not the only evidence for a series of structural periods comparable to what had been found on Site XIX West. Within the area examined the following sequence was observed:—

Level I.—A series of post-holes, cut into the subsoil, seems to belong to wooden buildings alined diagonally to the existing fort; no pottery was found at this level.

Level II.—The clay floor of the southern barrack (to retain a convenient term) overlay the post-holes: it was covered by a deposit whose maximum depth was about 3 inches, containing a quantity of burnt matter, including many pieces of partly charred wood. There were only a few uninformative scraps of pottery, but there were about 200 fragments, some of them distorted by intense heat, from one or two glass vessels, together with the interesting group of bronzes that are described below, p. 337.

¹ It is possible, on the other hand, that the arrangement may have been like that at Birdoswald in the second century, with a narrow store-building lying along the *via praetoria* and a standard barrack behind it; the 1895 plan does not preclude the possibility of such an original arrangement.

Level III.—The burnt deposit was sealed by a fresh clay floor, merging into the cobbled roadway which covered the north wall of the barrack. This floor was only a few inches below the turf; the associated structural remains had been badly disturbed—for example, the wall running north and south across this area, shown on the 1895 plan, had been wholly removed, and it was not possible to tell what form the block of buildings had now assumed, or which of the original walls were still retained in use. Nor was it possible to distinguish for certain between the pottery deposited on the new floor and the disturbed material from the overlying Level IV (see below) that had been removed; the pieces selected for illustration in figs. 28 and 33 are therefore described as coming from Level III+. But while some of this pottery must be assigned to the third century (fig. 28, 7; fig. 33, 1), most of it seems to belong to the latter part of the second.

It will be seen, then, that Site VIII retains structural evidence of a timber building, Level I, followed by a first stone building, Level II, whose occupation ended in destruction by fire; the second stone period, Level III, has produced pottery of the latter part of the second century; and a third stone period, Level IV, is attested by third-century pottery, and by the more northerly wall, already referred to as being two periods later than the original southern barrack. If the interpretation put forward above for the structures planned at the east end of this site is correct, they may belong to the Constantian period and represent Level V, completing a series similar to that on Site XIX. There is little doubt that a careful re-examination of the whole of Site VIII would allow the production of a tolerably complete series of plans; but the time and means available in 1936 did not allow further excavation, which must be deferred until another occasion.

The Section through the West Rampart.—Fig. 12 gives a diagrammatic representation of the features observed in this section which, as it will be seen presently, differed in material particulars from those cut in the east and north ramparts in 1937. Three periods were noted in the body of the rampart. The first was represented solely by a strip of turfwork, 11 feet from east to west, laid immediately on the subsoil, and underlying the foundation of the second period. The latter was of cobbles, with a large outer kerb, and measured 13 feet from east to west; from the kerb to the ditch was a sloping berm, 7 feet wide; the ditch itself sloped at an angle of about 40 degrees to the horizontal, but we could not get as far as its centre, as there is a small sike running by the side of the field-hedge at this side of the fort which set a limit to our trench. About a foot set back from the kerb, and a foot above it, came a foundation of

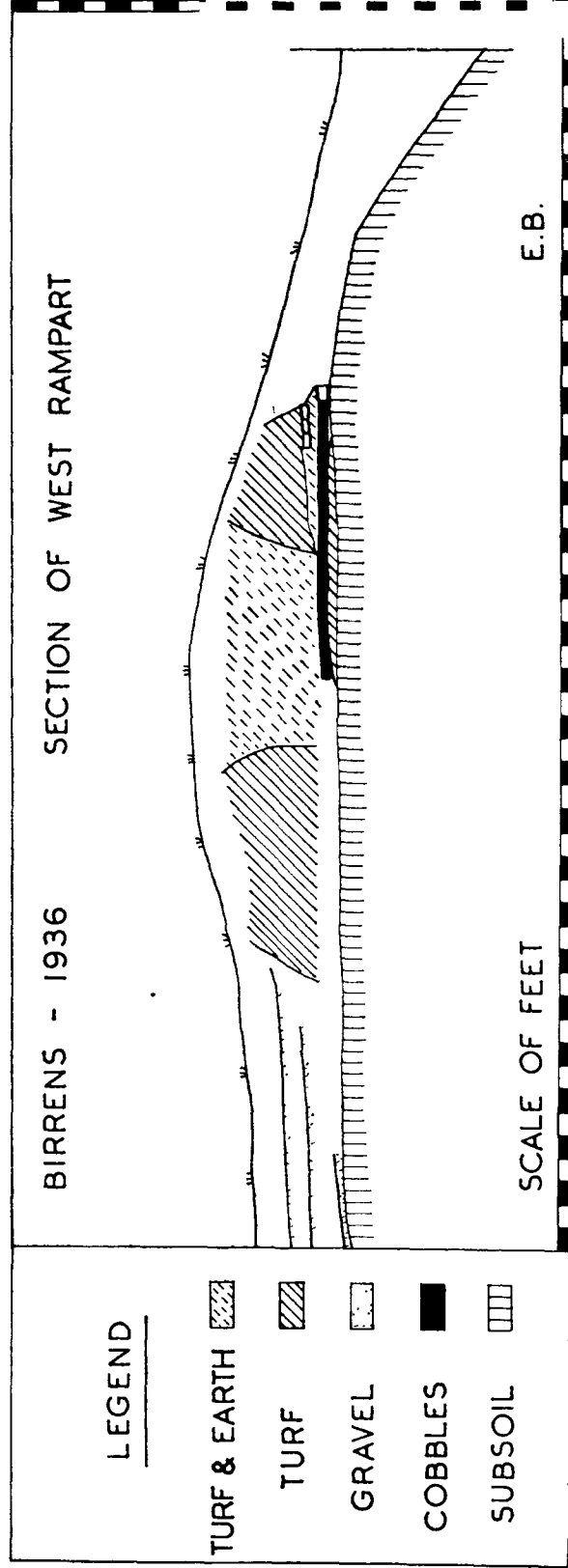


Fig. 12.

flags, 3 feet only from east to west,¹ on which rested a well-defined cheek of laid turf, which gives the third structural period; as Mr Richmond points out below, this seems to correspond to the re-facing of the north rampart, noted in the western of the two sections cut in 1937.

Below the turf cheek, and within it, the rampart was formed of mixed turf and earth; there was no inner foundation, but there was a wide inner cheek of laid turf, whose lower part was not observed sufficiently carefully for its relationship to the subsoil to be recorded, so that it must remain uncertain whether or not it represented a rearward addition to the rampart of Period II. Within this inner cheek came three successive levels of the *intervallum* road, each extending farther west than the one below it, surfaced with gravel. It is to be regretted that the relationship between these three levels and the successive buildings on the adjacent Site XIX could not be established; but there can be no doubt that further work near by, in the light of the experience gained in 1937, would enable a relationship to be defined.

III. THE EXCAVATIONS OF 1937.

Apart from the further examination of the rampart structure, dealt with by Mr Richmond in Section IV below, and some trenching near the granary, Site XV, to test the depth of stratification surviving in that part of the fort, work in 1937 was concentrated on two parts of Site XXII, where surface appearances seemed to promise that we should find a considerable depth of stratification. In the event, we found that we should have been better advised to select a building in the eastern part of the fort, for the subsoil proved to be rising more sharply towards the north than the present surface suggests, whereas it falls towards the east; in consequence, the maximum undisturbed deposits lie immediately inside the east rampart.

Site XXII East (fig. 13).—Here conditions were particularly disappointing, for the site proved to have been drastically denuded. Not only had the upper levels been almost wholly removed, but the north wall and all but the southernmost 12 feet of the east wall of the earliest stone building had gone. There was a partition wall running northwards from the south wall, 25 feet from the east end, and immediately west of it there was a 3-foot doorway, which had been blocked up in a second period (*cf.* fig. 14), when the partition wall had been demolished and covered by a rough tumble of stones. Within the room to the east of the partition the only surviving stratification was in the centre, where

¹ *Cf.* the outer kerb in the section through the east rampart, p. 302 below and fig. 18.

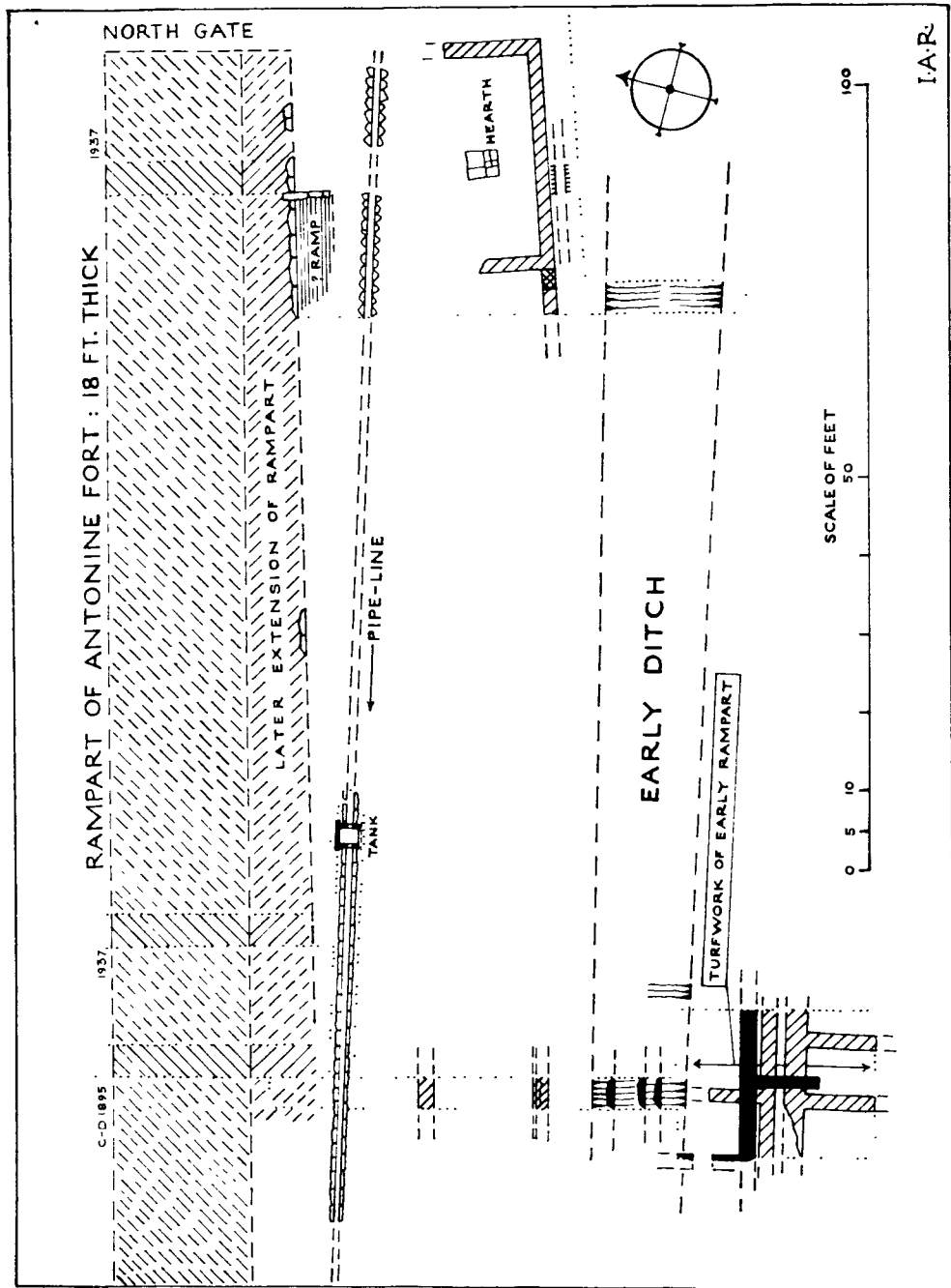


Fig. 13.

a secondary hearth overlay a deposit that contained the greater part of a deep flat-rimmed platter (fig. 31, 13), part of which may be seen in the photograph reproduced as fig. 15. In the second period on this site the building had been extended southwards across the street on to which the doorway already mentioned had opened; the "primary" wall, shown on the 1895 plan (fig. 2) as the upright stroke of an inverted T



Fig. 14. Site XXII East from the south, showing the walled-up doorway and demolished partition wall.

lying across this street, no doubt belongs to the same period; and the black occupation-layer that marked the floor of the extension yielded the beaker rim (fig. 31, 9) which may be paralleled in third-century deposits on Hadrian's Wall.

Careful search showed that there were no post-holes underlying the barrack or the street, and a discovery to be recorded presently explains why there were none; but for the time being it will be enough to say that this site, with only two surviving stone periods, and none of timber, presented so complete a contrast to the results from Sites XIX West and VIII that it only served to add to the problems with which we were faced. Accordingly we turned to another area, Site XXII West,

nearly 100 feet farther west and somewhat farther south, where there were surface indications of rather deeper stratification.

Site XXII West.—Here we were rewarded with an instructive if complicated series of levels, which it will be convenient to describe in the order of discovery rather than in the historical order observed hitherto.



Fig. 15. Site XXII East; secondary hearth, and portion of a flat-rimmed platter.

(1) Immediately below the turf we came upon a wall running east and west, with a southward partition 8 feet long with squared end, marking the north side of a doorway; there was nothing left of its south side and the southward continuation of the partition; to the north, at the west side of our excavation, there was another partition-wall, interrupted by a doorway rather under 3 feet wide. These walls are shown in solid black on fig. 13. We found no trace surviving of the floor of this building, but it is possible that some of the pottery found in the topsoil may have come from it; and there was a rough buttress against the south side of the east-west wall, in the body of which we found the two rims, fig. 31, 11 and 12.

(2) Interrupted by the walls just referred to, which had been cut into it, there was a layer several inches thick of burnt matter, among which there was a quantity of pottery (fig. 31, 1-8; fig. 32, 2-4). Within the area examined there were no structural remains that could be associated with this layer, which overlay a spread of debris that is clearly shown in fig. 16.



Fig. 16. Site XXII West from the west, showing the late east-west wall founded on a layer of debris, and the clay and cobble footing and rough stone floor of the earlier northern barrack.

(3) The latter spread in turn covered the remains, reduced for the most part to their clay and cobble footings, of two stone buildings, running east and west and separated by a narrow alley-way; there were two partition-walls in the southern building and one in the northern (to be seen in fig. 16), and the rooms so formed had floors either of clay or of rough flagging. There was no pottery associated with this level.

(4) Lowest of all, reaching a maximum depth of about 6 inches below the late east-west wall, there was a deposit of turfwork exactly comparable to that of the lowest period in the section cut through the west rampart in 1936 (p. 293 above), namely, laid directly upon the sub-soil, without any foundation. This was clearly the remains of a rampart;

and search to the north of it quickly revealed the associated ditch, which had been filled in when the buildings of Level (3) were erected; and at



Fig. 17. Cut across the early ditch, eastern side of the *retentura*, from the north-west.

this point there was also an east-west wall of a later period overlying it, between which and the ditch-filling there was sealed the small group of pottery illustrated as fig. 30 below. Further cuts were made to establish the line of the ditch, the first at 10 feet farther east, the next opposite the west end of Site XXII East, and a third (fig. 17) in the eastern half of the *retentura*; these showed that it had run approximately parallel to the existing north rampart and nearly 50 feet south of it, measuring

from its original inner edge to ditch centre. It was not possible to obtain as full details as we could have wished, for the discovery was only made in the last week of the season, and we were hampered by water whenever we dug down into the ditch (*cf.* fig. 17).

This level produced, below the central room of the southern building of Level (3), the greater part of the side of a large Samian platter of form 18/31; its surface and the edges of the fractures had been so badly damaged by the action of the soil (which at Birrens generally has this effect on Samian ware) that a drawing seemed out of the question; but the thickness of the fabric and the comparatively heavy profile preclude the possibility of a date earlier than the time of Hadrian being suggested for the vessel, and it might well belong to the Antonine period.

The significance of this discovery is plain for all, that fuller information must be sought by further digging. Comparison with the west section cut in 1936 shows that we have here the north rampart corresponding to the lowest of the three that were noted there; as Mr Richmond points out below, the sections cut through the visible north rampart, and through the east rampart at a point farther north than the early ditch, produced nothing comparable; in other words, the earliest west rampart returned eastwards 50 feet or more south of the eastward return now visible, and the latter represents a northward extension of the fort.

Evidence for the date of the extension is provided by two deposits of pottery; the first is the Samian platter already referred to, which shows that the occupation of the unenlarged fort did not come to an end before the time of Hadrian, and may have lasted into the time of Antoninus Pius. The second is a group of pottery found underlying the visible north rampart (figs. 22, 23 and 29), which includes pieces ranging in date from *circa* A.D. 120 till about the middle of the second century. It does not seem unreasonable to suggest that the extension was the work of Julius Verus, in the course of the reconstruction already attested by the inscription of A.D. 158. In that case, the lack of correspondence between the levels observed on Site XXII and those on Sites XIX and VIII becomes less of a problem; for the pottery already found entitles us to postulate at least one period, and possibly two, in the occupation of Birrens before that date. But this question, for the satisfactory solution of which the evidence is still too scanty, must be left for discussion in the concluding section of the present report; at the moment it will be sufficient to note that the absence of post-holes on Site XXII is adequately explained by the fact that the buildings in the enlarged fort were all of stone.

The remainder of the work done in 1937 is described by Mr Richmond in the following two sections, IV and V.

IV. THE RAMPART. By I. A. RICHMOND.

In 1895, when the first sections were cut through the ramparts at Birrens, it was found difficult to interpret even the main features of the structure. Doubt was expressed as to whether the stone bottoming noted below the rampart was intended to hold masonry or earthwork. To-day, it is possible to get a little further, largely on the basis of observation in the light of comparative material. Many points, however, still remain obscure, and it is just as evident as in 1895 that much further work must be carried out before the rampart structure can be completely understood.

The East Rampart (fig. 18).—This section proved to be the simplest. The original rampart, 20 feet wide, was composed of a core of mixed turf and upcast, retained between two very massive turf cheeks. The toe of the front cheek was set upon a 3-foot kerb of rough stonework, topped with clay. The rearward cheek was supported upon a broad kerb, 8 feet wide, and was bonded into the material of the core by a long tongue of turfwork. Both cheeks were linked at the base of the rampart by a bedding of turf. While, however, weathering had destroyed the original face of the front cheek, the profile of the rearward cheek had been perfectly preserved by the addition of a mass of mixed earth, adding at least 10 feet to the back of the rampart.

The rearward extension of the rampart covered an early *intervallum* road. At the point where the section was taken (*cf.* fig. 21, where the positions of the sections taken in 1936 and 1937 are marked) the additional material had also been cut back to receive a well-built oven of the same type as those discovered close to the east gate in 1895. On a level with this oven, a new ash-strewn layer began inside the fort. It is not, however, clear what the relation of the oven to the extended rampart may be. This depends upon whether a level intermediate between the early *intervallum* road and the oven exists.

In this section, two clear stages of construction can be detected, and an extension of the section would soon reveal the relation between the rampart and the buildings of the fort. It may be added that this section was cut north of the limits of the earlier fort (*cf.* p. 301 above).

The North Rampart, West Section (fig. 19).—The same sequence is visible here as in the east rampart. Stone kerbs at back and front carry an original rampart 19 feet thick. Here, however, the rearward cheek of

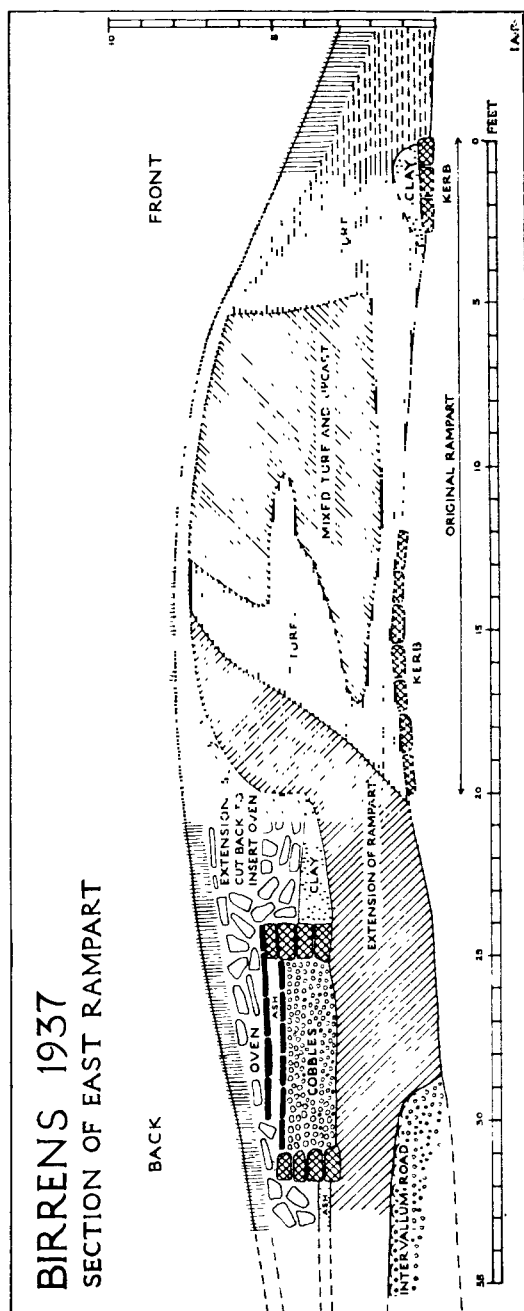


Fig. 18.

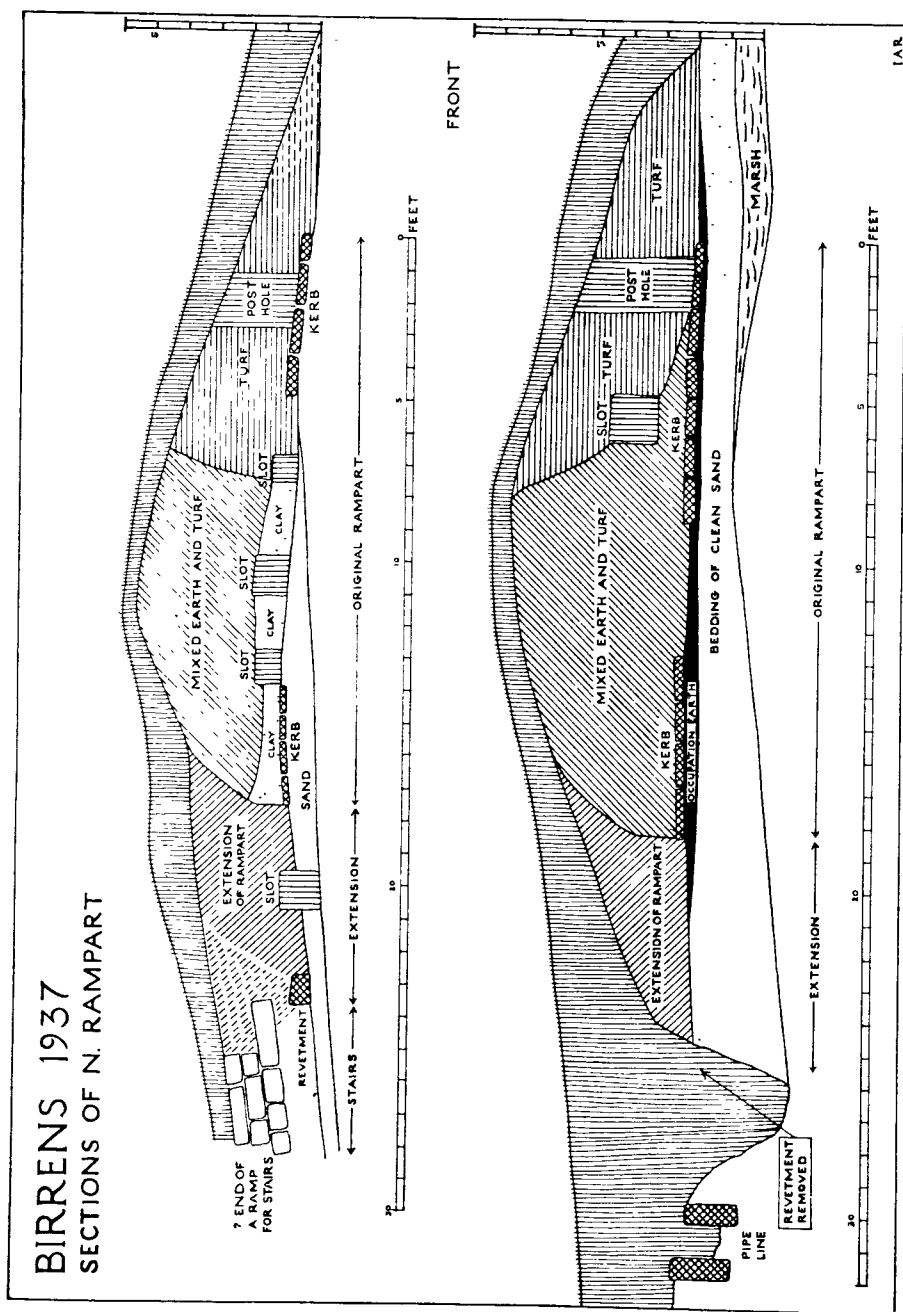


Fig. 19.

turfwork is missing, and the kerbs are considerably thicker. They are laid in occupation-earth, covering a bedding of clean sand, spread upon marshy ground. The pottery from this deposit is considered below (p. 310, figs. 22 and 29), and gives an Antonine date to the rampart. The front cheek of turfwork is pierced by two large elements of timber, the foremost an upright post resting upon the kerbing and held in position by the turfwork, the hindmost a horizontal beam running parallel with the front of the rampart.

Behind the original rampart the extension is present, and a massive feature has been delved away from its back. This missing feature is probably the stone revetment which occurs at this point in the east section of the north rampart.

It should be remarked that the turf cheek holding the timber work extends so far beyond the kerbing as to suggest very strongly that this cheek is not original, but is a refurbishing of the front of the rampart. Secure evidence for such a change was obtained in 1936, in a section of the west rampart, where the additional cheek was built upon the levelled remains of the earlier front, with a new kerb (*cf.* p. 295 and fig. 12 above).

The North Rampart, East Section (fig. 19).—A third section was cut 14 feet west of the north gate. This revealed, as farther west, the two stages of construction. The early rampart, however, contained three horizontal beams, parallel to the front and close together, about midway through the rampart. These are presumably connected with a tower at the gate, of which the foundations were carried upon wooden cradling. Such a tower might be expected to go with a gate resembling the west gate discovered in 1936, a half-timbered structure with rubble infilling (*cf.* fig. 4 above); and it may be remarked that the latter gate fits the early 19-foot rampart. The best parallel is the rampart of Saalburg II.¹

The rearward extension of the rampart here retained one course of its back revetment, and exhibited also a horizontal beam, passing through the rampart at an angle of 45 degrees, and evidently representing a diagonal stay. The front cheek of turf extended at least 6 feet beyond the front kerb, and was pierced by an upright, in much the same position as in the west section.

A third period in the construction of the rampart is represented by a revetment at right angles to the rampart (*cf.* fig. 20), retaining, as it would seem, the end of a ramp or platform for stairs. The builders of this work, at a considerably higher level, have removed all but one course of the back revetment of the extension, in order to bond in their earthwork.

¹ Jacobi, *Saalburg Jahrbuch*, iv. pp. 7-12.

Conclusion.—In conclusion, it may be noted that it is as yet impossible to discriminate accurately between the extension of the back of the rampart and the refurbishing of the front. These operations may be either distinct or contemporary. No accurate relationship has yet been established between the structure of the rampart and its gates, and it is



Fig. 20. Late revetment at right angles to the north rampart at the eastern section; in the foreground is a length, interrupted where the side-stones have been removed, of the water-channel.

doubtful whether the previous excavators have left enough in position to make such a definition possible. Finally, the denudation of the north end of the site makes it impossible to work out the sequence of building-periods in connection with the north rampart. This, on the other hand, should be possible behind either the east or west ramparts, and offers the remaining chance of associating the history of the buildings with that of their defences.

V. THE AQUEDUCT. By I. A. RICHMOND.

The first traces of this structure were detected behind the west sector of the north rampart, where the kerb and curious stone structure, noted

in 1895, were re-examined. It soon became plain that the so-called kerb was a continuous channel, formed either of large upright stones set on edge (and sometimes squeezed together) or of massive facing stones laid flat, as if forming the side of a drain.

The stone structure proved to be a box-like tank made of very well-fitted red sandstone slabs set in clay. The bottom was flagged, but the front flag had been torn out and was tipped on end. At the sides, where the drain-like structure reached the tank, the flags were notched, as if for inflow and outflow.

An interpretation of the function of this structure would have been difficult if a close analogy had not been forthcoming. At Corbridge,¹ in the same summer, a system of underground tanks closely resembling this one in type, though larger in size, had been discovered in connection with the distribution of water from the fountain at the aqueduct-head. While these, however, were fed from carefully built stone conduits, the Birrens example is fed from a rather clumsily built duct, with strong sides but no bottom. This can be explained only upon the assumption that the duct at Birrens originally held a pipe-line, for such a duct as remained would effectively shield either a lead pipe or a wooden conduit.

This interpretation however, demanded a source of supply entering the fort at its north end, whence the water might be distributed all over the site; and levelling soon showed that the only possible line of entry was along the causeway leading across the ditch-system to the north gate. A trench was therefore cut across the causeway 40 feet north of the rampart face. This revealed, in the centre of the causeway, an underground channel composed of large stones in which a semicircular gutter had been cut, while their tops were covered with large flat slabs set in very stiff clay. Water was still running in the channel, of which the cross-section was 10 inches wide.

The channel discovered exactly resembles the visible aqueduct at Corbridge, of which a few cover-slabs are now in position, and recalls very closely Bruce's description² of the water-channel supplying Bremennium, which entered by the south causeway of the fort. There can be no doubt as to its purpose. It may be presumed that the supply arrived at a distribution-tank behind the north gate, and was thence carried throughout the fort. Important buildings would have their own supply. The rank and file drew their water from such dipping-tanks as the example discovered behind the north rampart.

There can be little doubt that the system, or its like, was originally

¹ AA¹, xv. pp. 253-54.

² *The Roman Wall*, edn. 2, p. 301.

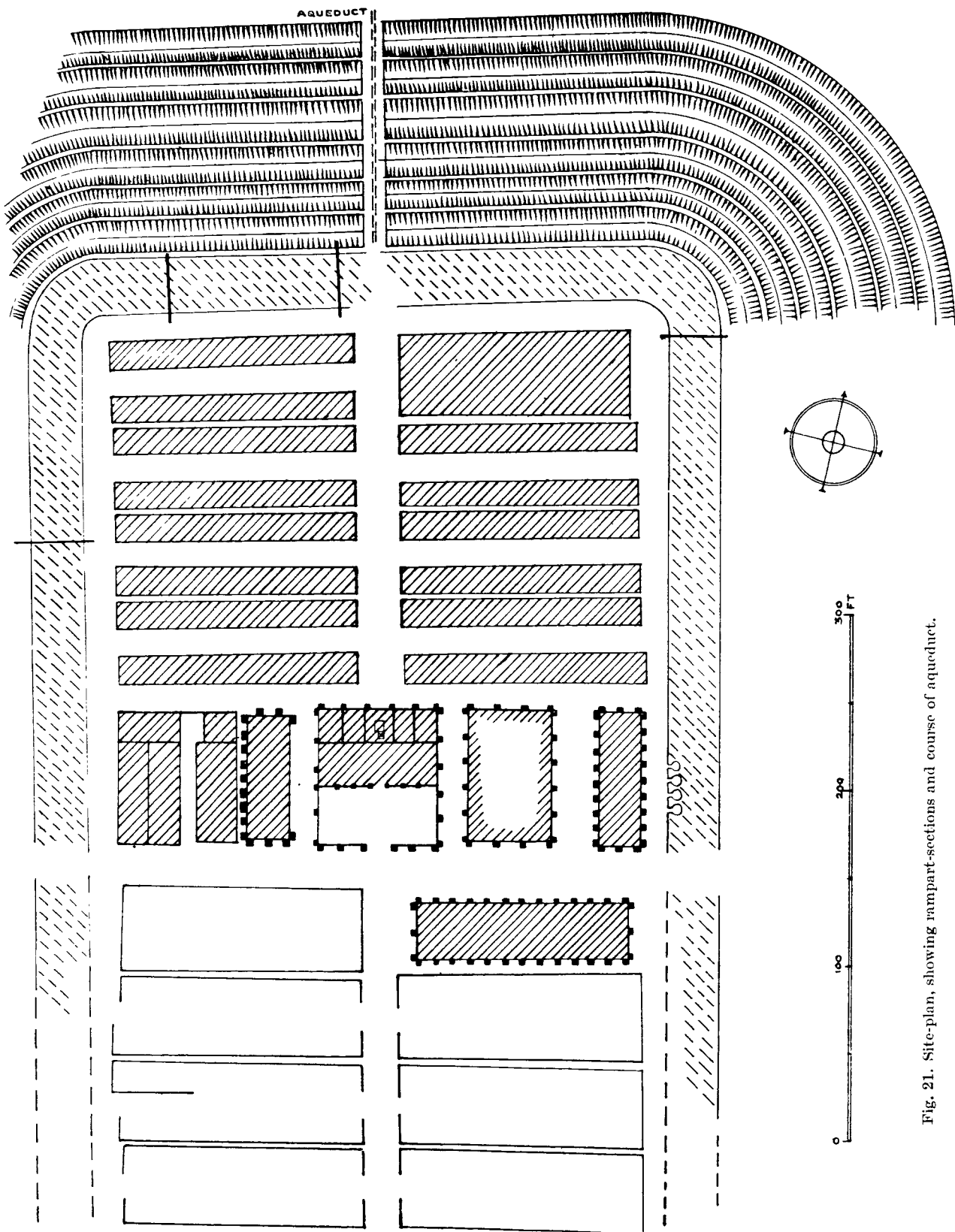


Fig. 21. Site-plan, showing rampart-sections and course of aqueduct.

much more common in permanent forts than the known examples would suggest. It is obvious, especially in cavalry forts, that the solitary well in the *principia*, so often cited as the source of supply, cannot have met the convenience of the whole garrison. A constant supply continually flowing from tank to tank, and delivered below ground, where its presence remained unknown to the enemy, would ensure that the everyday needs were met upon a scale which conforms to Roman standards of lavishness.

VI. THE FINDS.

In the following pages will be found illustrations and descriptions of as many of the objects found—decorated Samian ware, other pottery, glass, bronze objects, an inscription, and coins—as had a claim to publication, either as coming from stratified deposits or because of their intrinsic interest. Most of the material does come from stratified deposits, and for that reason it has seemed best to describe the pottery, which forms the bulk of it, mainly according to the deposits in which it was found, rather than in the manner of a museum catalogue, type by type.

The objects found during the excavations of 1936 have been presented by Mr and Mrs Mackie to the Dumfries Museum; the destination of those found in 1937 has not yet been decided, though it is probable that they will be divided between the National Museum of Antiquities and the Dumfries Museum. It seems necessary, therefore, to note, in the case of each item, the year in which it was found, so that it may be easier to identify individual pieces in time to come. Occasion has been taken to include notes on a few of the potsherds found during the earlier excavations at Birrens; in such cases, the National Museum of Antiquities reference number takes the place of the date 1936 or 1937.

A. *Decorated Samian Ware.*

It has recently been suggested ¹ that Roman regiments received their supplies of crockery from "some central authority," which presumably made large purchases direct from the manufacturers. It is hardly necessary to emphasize that there is no evidence in support of this view, when evidence to the contrary (of which Birrens can supply its quota) is so abundant. In the first place, the assumption that pottery was issued to regiments, and owned collectively by them, is belied alike by what we know of the organisation of the Roman army ² and by the frequency with

¹ By Sir George Macdonald, "The Dating-value of Samian Ware," in *JRS*, xxv. p. 197.

² For example, there is no evidence of such a practice in the Egyptian papyri in which, incidentally, the private ownership of all kinds of equipment is attested.

which vessels are found bearing the name of an individual owner; two examples are illustrated below, fig. 36, 1 and 2, and several were found in the earlier excavations at Birrens.¹ Moreover, block purchase should result in far greater uniformity in the material on a military site than obtains in a town, supplied by the ordinary channels of competitive trade; but the attempt to make such a distinction between forts and towns² is clearly tendentious; no greater uniformity can be observed on military than on civil sites, and the present small series of decorated Samian from Birrens provides an admirable example of the variety of sources on which troops in garrison at a single fort could draw:³ Nos. 1 and 4-7 below come from Central Gaulish potteries whose products are regularly represented in Britain, but the East Gaulish or German bowls, Nos. 2, 3, and 9, have but few counterparts on civil or military sites in this region. On the assumption of block purchase, they had no business to find their way to Birrens; but purchase by individual soldiers from *negotiatores cretarii* supplies an ample explanation. There is a further point, however, which it seems worth while discussing, particularly in view of the occurrence at Birrens of a bowl from the Samian potteries at Trier. Oelmann has observed⁴ that in Germany the products of Trier hardly made their way farther south than the Main, whereas the far more extensive potteries of Rheinzabern were able to gain a share of the market even in Trier itself. Decorated bowls from Trier are so uncommon in the north of Britain that it may be permissible to suggest that they came, not in the ships or crates of pottery merchants, but in the baggage of individual soldiers or civilians. In that case, No. 9 below might well have come to Birrens with someone, like the architect Amandus, who had been serving in Germany before the British expedition of Severus; the Hadrianic piece, No. 2, might equally have been brought by a man transferred from Germany under Platorius Nepos, and No. 3 (to which there are several parallels at Corbridge) by a soldier of Lollius Urbicus. For all its smallness, then, the group of decorated Samian from the recent excavations presents features of more than usual interest, which may serve to justify a somewhat extended discussion of the individual pieces.

1. Fig. 22, A and B. 1937; west section through north rampart, below flag footing (see also fig. 29, p. 324, below). Mr J. A. Stanfield reports as follows:—

“The fragment (drawing A) is much worn, and the glaze has disappeared from the surfaces in relief. Nevertheless the design is clearly recognisable.

¹ PSAS, xxx. pp. 107-108.

² JRS, xxv. pp. 196-197.

³ An analogy, from the earlier excavations at Birrens, is referred to in JRS, xxv. p. 199, where its implications are not realised.

⁴ *Niederbieber*, p. 19.

and the restoration (drawing B) is certain. The design is an arcade, the arches being double, connected by astragali, and supported by pillars with prong-like projections from the capitals, while each pillar is placed between a pair of wavy lines. The figure subjects are *Bacchus* (O. 566) and *Diana* (O. 109).

A bowl by the same potter has been found at Chesterholm (AA⁴. xiii., fig. 8, 12), but, since the connection between that bowl and the Birrens fragment is not immediately obvious, a fragment from London is also illus-

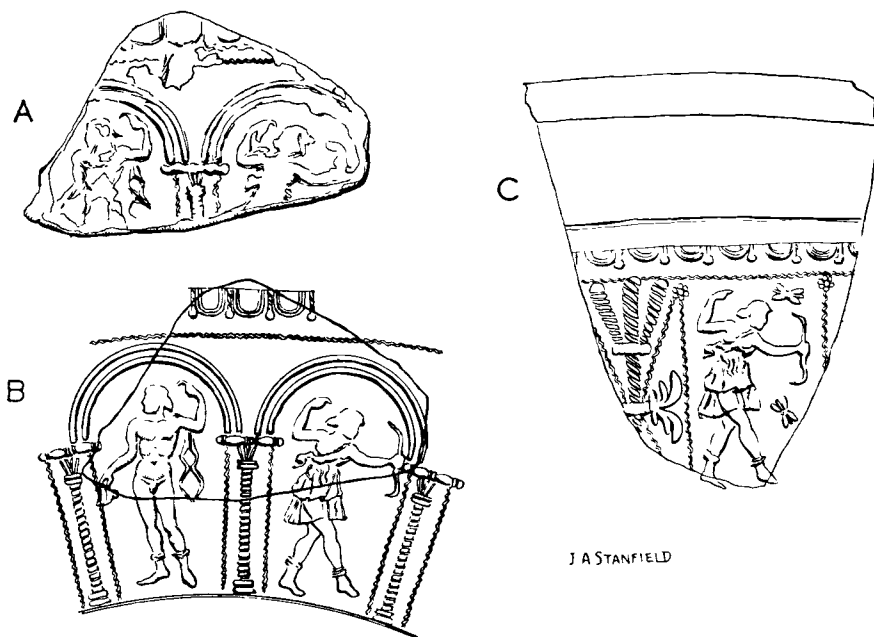


Fig. 22. Decorated Samian from Birrens (A=B) and from London (C). ($\frac{1}{2}$.)

trated (drawing C), which bears the peculiar cruciform ornament of the Chesterholm bowl side by side with the Diana of the Birrens piece. These two motifs also occur together on fragments, not yet published, from Corbridge.

As stated in the notes on the Chesterholm bowl, the style of these designs is characteristic of certain Central Gaulish potters whose manufactories were in all probability situated at Vichy, and whose most fruitful period of production occurred during the principate of Trajan. The present potter's designs contain ornamental elements that were used by several of the Vichy potters, notably RANTO and MEDETVS. Nevertheless, he cannot be identified with either of them, for the only signed example of his work known to the present writer bears the initial D. The cursive initial occurs, below the decoration, on a piece of form 37, in the Cambridge Museum of Archaeology and Ethnology, on which the decoration is similar to that of the Birrens fragment, namely an arcade, whose double arches (one enclosing the same

Diana) are connected by astragali and supported by identical pillars between wavy lines. Other figures on the Cambridge piece are *Perseus* (O. 233), a *dancer* (O. 281), and an interleaved snake-like ornament in the style of RANTO. Additional figures, occurring on a separate fragment, undoubtedly part of the same bowl, are the group O. 238 and a *dancer* (O. 354).

The work of this potter, who must now be referred to as D..... cannot be said to be uncommon, as examples of it have been found over a wide area that includes London, Colchester, Richborough, Verulamium, and Silchester in the south of England, York, Corbridge and Chesterholm in the north, and Leicester, Wroxeter, and Chester in between.

It now remains to establish the connection between the work of D..... and that of RANTO and MEDETVS by means of the following concordance: the signed bowls by the two last-mentioned potters being the well-known form 29 from Heddernheim stamped RANTOF, and the vessel of the same form at Kettering with the stamp MEDETI M. They will be referred to as the Heddernheim and Kettering bowls respectively.

The *ovolo* (drawing B) is closely similar to those on fragments in the style of RANTO from London, Leicester, and Corbridge.

The *fine wavy lines* (drawings B and C) are characteristic of Trajanic potters generally and, with the *seven-bead rosette* (drawing C) occur on the Heddernheim and Kettering bowls.

The *Bacchus* (drawing B) occurs on a fragment of form 37 from Leicester, and on a fragment at the British Museum (M. 1389) with the same *ovolo*, both in the style of RANTO; and also on a form 30 at the Guildhall Museum, London, in conjunction with the *pelta* that occurs on the Heddernheim and Kettering bowls.

The *Diana* (drawings B and C), although it has not been met with by the present writer on any bowl directly in the style of either RANTO or MEDETVS, occurs (drawing C) in conjunction with the little butterfly-like ornament used on the Heddernheim and Kettering bowls. Both the *Diana* and the "butterfly" occur on the Corbridge pieces already referred to.

The *double acanthus leaf* (drawing C), which also occurs between the arches on the Cambridge bowl, also occurs on the Kettering bowl.

Another element of design on the Heddernheim bowl which, though not present on drawings B and C, occurs on fragments in the style of D....., is a *beaded ring* similar to those used by IOENALIS and DONNAVVS, but like RANTO's variety of that ring in having a tiny five-pointed star within the ring. This beaded ring appears on a fragment of form 30 in the Guildhall Museum, which also shows the pillar, the double arch, and the *ovolo* of drawing B.

There is therefore good evidence that the potter of the Birrens fragment, the initial letter of whose name was D, was a Trajanic potter, perhaps directly associated with MEDETVS and RANTO. The date of the Birrens piece would be rather later than the Heddernheim and Kettering bowls, say *circa* A.D. 110-115."

The date assigned to this piece on general grounds may be checked by reference to site-evidence from the north of England. Both at Corbridge and Chesterholm the work of the same potter occurs, in associa-

tion with deposits which start in the Flavian period, and are sharply interrupted at about the point where the deposits on Hadrian's Wall begin; at High Shield,¹ on the other hand, a piece by the same potter has been found in association with pottery clearly starting with Hadrian. That is to say, we have a "borderline" potter before us, whose work may be expected on Trajanic and on Hadrianic sites; and it is only by reference to the associated finds that it will be possible to judge the siting. Fortunately at Birrens the associated finds, though few in number, have a clear story to tell; in place of the characteristic fabrics of the Flavian-Trajanic period, the deposit from which the present piece came included two examples of the black-fumed cooking-pot, which in the north of Britain is typical of the period from Hadrian onwards. There is thus no necessity to suppose occupation at Birrens under Trajan; but the occurrence of this fragment, and some other pieces discussed below (p. 322), provides satisfactory evidence of occupation starting at about the same time as in the forts on Hadrian's Wall.

2. Fig. 23. 1937; underlying north rampart, east section. Mr J. A. Stanfield supplies the following note:—

"A small fragment, fortunately large enough to show the form of the vessel of which it was a part, namely the hybrid form 29.37. The central moulding bears a string of conjoined astragali bordered by rows of small, neat beads. Over this, on the upper frieze, is a series of acanthus calices placed side by side, with another row of beads above and, finally, the remains of a series of festoons with pendants that terminated in sharp-pointed leaves. Less remains of the lower frieze, but there are indications that the decoration consisted of medallions (of the same type as the festoons) alternating with some other ornament. In fig. 23, A is a drawing of the fragment itself, and it is also shown in section as part of the restored profile, based on a bowl of similar shape from Heiligenberg (Knorr, *Rottenburg*, pl. viii. 7).

As concerns the style of decoration, it is true that strings of conjoined astragali were much used on pottery from Trier, notably by the potter Dexter (Fölzer, pl. xv. 14), and also festoons somewhat similar in character to those of this piece (*ibid.*, pl. xv. 13, 18, and 19); and conjoined astragali were also used on La Madeleine ware (Ricken, *Saalburg*, pl. ix. 19, and x. 1). On the other hand, although an acanthus calyx was also used at Trier (Fölzer, pl. xxxii. 900), as used there it has not the drooping ends of those on the Birrens fragment; these are much more like Ludowici's type O. 1, used by seven Rheinzabern potters, including Ianus and Reginus, who both appear to have worked at Heiligenberg before moving to Rheinzabern (Oswald, *Index of Potters' Stamps*, *sub voce*).

Apart from the ornamental types mentioned above, however, there is little resemblance to Trier, La Madeleine, or Rheinzabern ware in the present fragment, and much closer parallels exist in certain pieces, from a pottery

¹ AA¹, xv. p. 349.

which Ricken does not assign to any particular place, in the Saalburg collection (Ricken, *Saalburg*, pl. xiv. 5, 6, 7, and 9). On Ricken's 6 and 7 occurs the same acanthus calyx with drooping ends, used in a similar way, namely, side by side—in 7 taking the place of an ovolo, and in 6 at the base of the decoration. Furthermore, the small triple ornament in the medallion of the Birrens sherd occurs on all four of the Saalburg fragments, on which rows of small beads are also seen, so that there is little doubt that the pieces from Birrens and the Saalburg are the products of the same pottery."

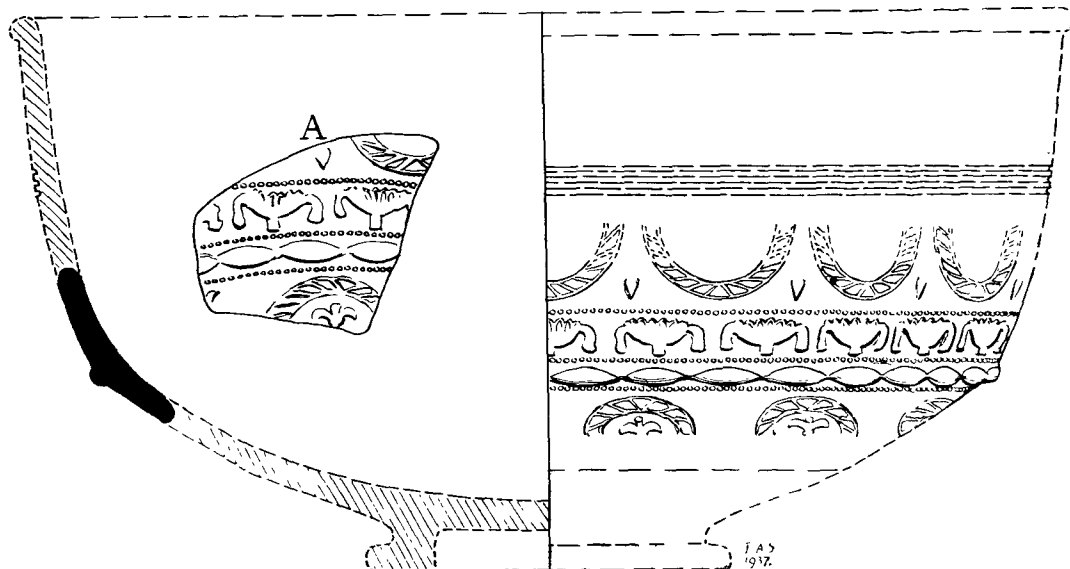


Fig. 23. East Gaulish bowl, form 29/37. ($\frac{1}{2}$.)

3. Fig. 24, 1. 1937; Site XXII East, unstratified. Mr J. A. Stanfield writes:—

"This is part of a bowl in La Madeleine fabric, with a very deep plain band between the lip and the decoration. All the types are shown by both Fölzer and Ricken as La Madeleine types, viz.:

	Fölzer, pl. xxv.	Ricken, pl. vii.
<i>Acanthus calyx</i>	74	25
<i>Astragalus</i>	100	8
<i>Triple leaf</i>	92	14
<i>Ovolo</i>	119	C
<i>Rosette</i>	108	1

A similar panel of superimposed acanthus calices occurs on a fragment from Friedberg (Ricken, pl. x. 10), and astragali placed athwart bead-rows are common on this ware (*cf.* Ricken, pl. ix. 1, 3, 6, 14, etc.; Fölzer, pl. i. 29, 39, etc.)."

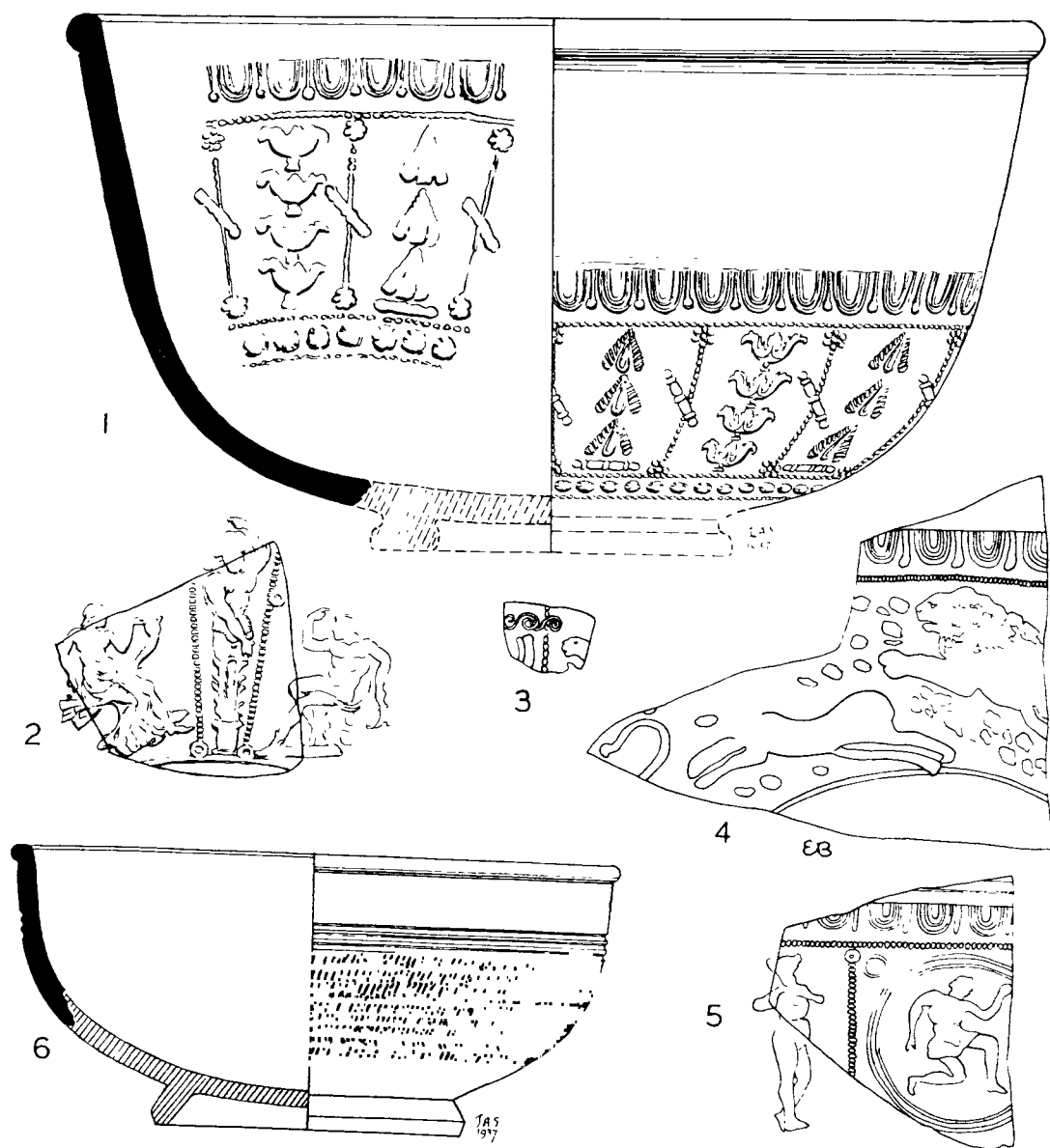


Fig. 24. Decorated Samian ware. (1.)

The products of La Madeleine are seldom represented on sites in the north of Britain; I have not noted any other examples from Scotland, but there are several vessels included in the Corbridge collection; none of the Corbridge pieces is close enough in style to the present bowl to warrant a detailed comparison here.

4. Fig. 24, 2. 1936; unstratified. Mr Stanfield writes:—

“This piece, in Lezoux ware, is unmistakably the work of the potter DIVIXTVS. The seated figure of *Fortune* (O. 801) occurs on form 37 from Silchester, form 37 from Corbridge (AA³, viii. p. 191, fig. 13), form 30 from Caerleon (Lee, *Isca Silurum*, pl. xii. 3), forms 30 and 37 at Colchester, and on another form 37 from Corbridge (not yet published), all stamped DIVIX · F. The *caryatid* (O. 1207 A) occurs on at least eight bowls bearing the same stamp, and on many more, in the same style, on which no stamp is preserved; it is perhaps the commonest figure-type used by DIVIXTVS. The third figure, of which only part of the legs is preserved, is the seated *Bacchus* (O. 571) which occurs on the bowls from Silchester, Caerleon, and Colchester referred to above. If anything further were needed to prove the attribution of the piece, it would be the ring-terminal of the bead-rows, which occurs on as many as seventeen bowls stamped by this potter.”

5. Fig. 24, 3. 1937; Site XXII West, in the same occupation-layer as fig. 31, Nos. 1–8, below. A small, worn fragment from a bowl by the “Potter of the small S” (cf. CW², xxxvi. p. 136), whose products are widely represented on Antonine sites, for example at Balmuildy, Mumrills, and Newstead. The *panther* (O. 1570), whose head just shows on the present fragment, is one of this potter’s commonest types; his commonest *ovolo* is that in which the tongue is replaced by a knob projecting from the outer line of the egg, at the right-hand side, as on *Mumrills*, Nos. 48 and 54; the former piece also shows the leaves in the field of which the potter was extremely fond.

6. Fig. 24, 4. 1937: Site XXII West, in the same occupation-layer. A large piece, partly burnt, from a bowl decorated in free style; it comes from a rather worn mould, so that the decoration has lost much of its detail. The figure-types are a *lion* (O. 1450), whose tail just shows at the left and his forepart at the right, and a *stag* (O. 1772); the types are assigned to various potters by Dr Oswald, but the only two shown to have used both of them are ATTIANVS (who stamps OF ATT) and CRICIRO; the present piece might be assigned to the former, who uses similar conventional herbage, but the *ovolo* looks unlike any known to have been used by Attianus.

7. Fig. 24, 5. 1937: Site XXII West, overlying the filled-in ditch and sealed by later walls (cf. fig. 30, p. 325, below). Part of a bowl, form 30, in the style of CINNAMVS. The figure-types are *Venus* (O. 331)

and a *warrior* (O. 204), both of which occur commonly on work stamped by this potter; *Mumrills*, No. 32, is a larger piece from a bowl probably made in the same mould.

8. Fig. 24, 6. 1937; unstratified. Mr Stanfield supplies the following description:—

“Form 37 in rouletted technique, from an East Gaulish pottery. Three deep grooves separate the plain zone from the rouletted decoration, which is in lateral bands placed close together and sometimes overlapping.”

9. Fig. 25, 1. 1936; west gate, unstratified. Part of a rather small bowl of form 37; Trier fabric. The *ovolo*, Fölzer's type 944, is not very

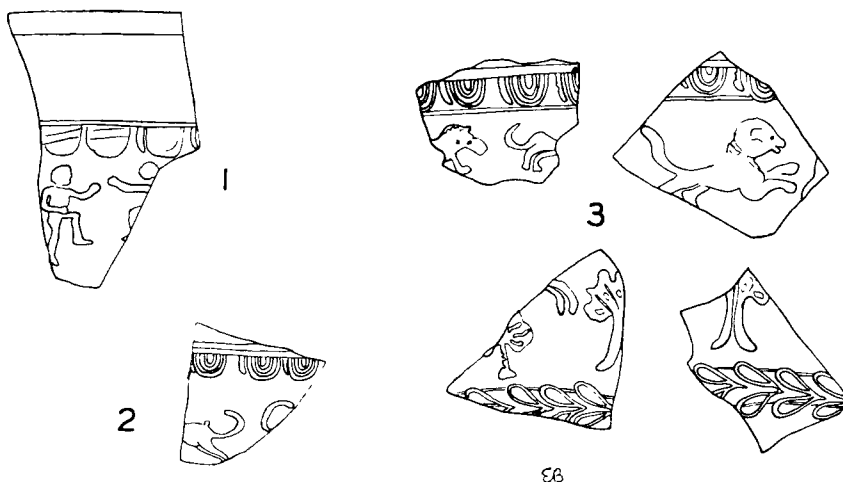


Fig. 25. Trier ware fragments: 1, Birrens; 2, Corbridge; 3, Housesteads. (½.)

clear, partly because the bowl has been made in a worn mould, and partly through defacement sustained when the rim was being attached. The figure-types are two *boxers* (Fölzer 524, 525), which occur frequently on vessels with this *ovolo*; the name of the potter who used it is not known, but Fölzer, discussing his work,¹ assigns him to the close of the second century and the beginning of the third, a dating supported by the occurrence of his products at Niederbieber.² His work is seldom found in the north of Britain; we have not noted any other examples in Scotland, and there is only one piece showing the same *ovolo* in the collection at Corbridge. In order to give a better idea of his style of decoration, we illustrate the Corbridge fragment and four pieces of a

¹ *Op. cit.*, p. 79 f.

² *Niederbieber*, pl. vii. 34 and 35.

bowl from Housesteads: Fig. 25, 2, *Corbridge*; find-spot unrecorded. *Ovolo* as before; *dog* to left (Fölzer 651); tail only of *dog* to right (Fölzer 642). Fig. 25, 3, *Housesteads*; underlying building VIII in the *vicus*. *Ovolo* as before; *lion* and *boar* (Fölzer 593, 610); *lion* (Fölzer 589); hind legs only of *dog* (Fölzer 650), and *trees* (Fölzer 737, 772). The lower wreath is of the form particularly characteristic of Trier products, and another typical feature is the use of plain guide-lines instead of bead-rows. The glaze of this bowl is of the clear orange tint which Fölzer notes as a common feature of the potter's work.

B. Other Pottery.

In considering the pottery other than decorated Samian ware, it seems necessary to begin by setting forth the principles on which its value for dating purposes should be estimated. There are several points to bear in mind. In the first place, not all types had a sufficiently restricted life to be of great value in this connection; thus, the flat-rimmed platter, in the black fumed ware which first appears in Hadrianic deposits in the north of Britain, persists well into the third century, with little dateable variety in its profile;¹ and it is often difficult to attempt a close dating of cooking-pots² in the same fabric. Though stratified examples of such vessels are illustrated below, it has not been thought worth while to quote extensive parallels from other sites. And when parallels are quoted, to be of real value they must only be taken from securely stratified deposits, preferably dateable within exact limits; for that reason, unless it is to show that a type occurs on Antonine sites, it has seldom been necessary to quote parallels from Newstead or from the forts on the Wall of Pius; quite apart from the uncertainty as to the terminal date of their occupation,³ the scarcity of stratified pieces assignable to one or other of their successive periods necessitates looking elsewhere for parallels. Fortunately, a valuable series of material is available from Hadrian's Wall, particularly from the mile-castles and turrets excavated by our Honorary Fellow, Mr F. G. Simpson, whose reports⁴ provide the essential starting-point for a study such as this. There will be frequent occasion to refer to the periods of Hadrian's Wall, so that it may be desirable to insert here a schedule of them:⁵

¹ Cf. *Birdoswald*, fig. 16, 73.

² For the definition of cooking-pots, as opposed to jars, cf. *CW*², xi. p. 450.

³ See below, p. 343.

⁴ *CW*², xi. pp. 390-461; *CW*², xiii. pp. 297-397.

⁵ Cf. *AA*⁴, vii. pp. 164-74; *AA*⁴, xv. p. 267.

Period I A: *circa* A.D. 122-162.

Period I B: *circa* A.D. 162-196.

Period II: *circa* A.D. 205-297.

Period III: *circa* A.D. 300-367.

Period IV: *circa* A.D. 368-383 or later.¹

Periods I A, I B and II are of obvious importance for a study of the pottery from Birrens; types which occur in Period II only can be dated securely to the third century, and demonstrate that the fort continued to be occupied in that period; and the known re-building of Birrens in A.D. 158, coming so close to the end of I A, invites a comparison between the second-century levels here and those on Hadrian's Wall. But of that more in the sequel; we must return to our examination of principles.

The next point to be established is the definition of a useful type. By that is implied more than the occurrence of pieces similar in profile and fabric: what is more important is consistent stratification. In other words, an isolated piece, even though securely stratified, is not of great value, for it may be a freak; ² similar pieces coming from deposits of different periods (unless, for reasons discussed below, they can be shown to be intrusive in one of those periods) cannot provide evidence for close dating: but two or more vessels of the same profile and fabric, coming from deposits of the same period, allow the confident dating of unstratified parallels. It is perhaps necessary to emphasize the importance of fabric, since an examination of the pieces themselves is needed for its identity to be established, whereas similarity of profile can be shown by drawings; and experience shows that similarity of profile alone is not necessarily a safe guide.³

At this stage it seems necessary to insert a caution as to the interpretation of stratification. The mere occurrence of a piece in a stratified deposit does not necessarily mean that the vessel from which it comes was in use during the period when that deposit was formed. We may exclude the possibility of introduction from a later level by subsequent disturbance, for that will mean that the deposit is not completely stratified. But it often happens that pieces lying about a site long occupied will find their way into an occupation-layer far later in date than the period

¹ Cf. Hedley, *The last days of Corstopitum and the Roman Wall—the coin evidence*, in AA⁴, xiv, pp. 95-102.

² E.g. *Apple-tree turret*, pl. xvii. 63, unjustifiably treated as a type by me in AA⁴, vii, p. 173, and by Collingwood, *Archæology of Roman Britain*, p. 222.

³ Cf. the mortarium, *Birdoswald*, fig. 13, 10; its profile has suggested an early second-century date to competent judges, but its fabric is that commonly found in hammer-head mortaria, and it belongs to the close of Period II.

of their manufacture, use and breakage:¹ such pieces can usually be distinguished without difficulty, by the student of Roman ceramics, from the material contemporary with the occupation-layer, and it is necessary to describe them as "strays," in contrast to the "survivals" or pieces characteristic of the period immediately preceding, and only rarely represented in the period in question. It would not have been necessary to stress this point if the distinction between strays and survivals had been observed more closely by previous writers.² And there is another point which seems worth stressing, namely, that it is sometimes possible to arrive at a closer dating than merely to a given period, by observing the circumstances in which a particular vessel was discovered. Thus, on a clay floor, which was made up several times in the course of a period, the pieces trodden deepest into the clay are likely to belong to the early years of the period; but pieces lying among the debris of destruction, by contrast, will have been in use at its close.³ And it is perhaps the clearest indication that vessels belong to the very end of a period, if they are found complete or nearly complete in an occupation layer;⁴ for the normal practice was to carry rubbish away and tip it outside the fort; hence the scarcity of pottery in barracks of the second and third centuries, with which northern excavators have long been familiar.

Finally, it may not be out of place to observe that it is a mistake to look for parallels too far afield, unless we are dealing with the products of a great exporting centre, such as Samian or Castor ware, or unless we are confronted with vessels which there is reason to regard as unusual importations into the district with which we are concerned; it is true that the interaction of Italic and La Tène elements produced a somewhat similar series of developments in the pottery fashions of Western Europe,⁵ but there is sufficient evidence to show that the incidence of those developments varied considerably in different districts, even within the same province.⁶

¹ It is hardly necessary to quote instances, but cf. *Corbridge*, 1938, fig. 8, 14 and fig. 13, 6, pre-Hadrianic strays in an Antonine deposit.

² Thus, at *Munrills* a typically Flavian carinated bowl with reeded rim (fig. 101, 1) occurred in Level B of the westmost Antonine ditch, and was interpreted as a survival into the Antonine period, as was a fragment of "rustic" ware (fig. 103, 4) found "a little way beneath the modern surface."

³ This point was first made, by implication, in the report on *Pollross Burn milecastle*, p. 447 *et seq.*, where "early first period" material is distinguished from "first period (mostly in debris)."

⁴ Cf. *Birdoswald*, figs. 13, 8; 15, 42 and 44—from the close of Period II; and Ritterling's observations in *Hofheim*, p. 85.

⁵ S. N. Miller in *Balmuildy*, p. 82.

⁶ Cf. the case of black-fumed ware, referred to already as occurring in deposits from the time of Hadrian onwards in the north of Britain (cf. AA⁴, xv. p. 229); in Wales it began to appear before the close of the first century.

Judged in accordance with the above principles, the evidence provided by the pottery from Birrens is remarkably clear. Much of it, indeed, for the reasons outlined above, cannot be dated very closely: and the denudation of the upper levels, and the difficulty of access to the earliest strata, combine to make the series as a whole rather scantier at the beginning and the end of the occupation than could have been wished. But it is instructive to note the correlations which it has been possible to make between Levels II and III at Birrens and I A and I B on Hadrian's Wall: the jug and mortarium¹ belonging to the close of the period represented by Level III, the former underlying a wall which in 1895 had been taken to be "primary," justify the attribution of Level IV to the Severan reconstruction: and there is ample variety of types which on Hadrian's Wall occur only in Period II. Some of these types can be assigned to the end of that period, particularly the hæmatite-washed mortaria represented most strikingly at Birrens by the piece found underlying the side of the water-channel, near the north gate:² so that there can no longer be any question but that Birrens, like the other outliers of Hadrian's Wall, continued in occupation throughout the third century. It is unfortunate that the latest level has produced so little pottery, so that we are unable to estimate how long into the fourth century it lasted; but the fine jar illustrated as fig. 35 is a handsome addition to the growing corpus of early fourth-century types.

Fig. 26. 1936; stratified pieces from Site XIX.

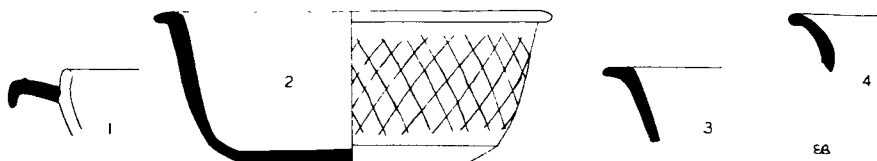


Fig. 26. Stratified pieces from Site XIX. (4.)

1. Level I. Flange fragment from a Samian bowl of Curle's type 11: on the upper edge of the flange is barbotine decoration, as normally on this type. Curle 11 is described by Oswald and Pryce, *Terra Sigillata*, p. 212, as especially characteristic of the Flavian period, but persisting into the time of Trajan: but its lower limit can be carried rather farther, for an example occurred on Hadrian's Wall at *Birdoswald turret* (p. 349). As far as the present piece is concerned, it seems to come late in the development of the type, for the sharp downward turn of the flange seems

¹ Fig. 27.

² Fig. 31, 14.

without parallel on any Flavian site. It must be left undecided whether we have here a late or an exceptional vessel: it cannot be taken as necessarily pre-Hadrianic.

2. Level II. Deep, flat-rimmed platter, with slight chamfer between the base and the wall: black fumed ware. From the time of Hadrian, when it first appears in the north of Britain, there is little variation in the rim-section of this type: analogies could be cited from both second-century periods on Hadrian's Wall. But the fabric of this vessel, a rich black, with the surface highly burnished, is best paralleled in deposits of period I A.

3. Level II. Rim of a similar platter; once black, but now badly burnt.

4. In debris overlying the flagged floor of Level IV. Outbent rim-fragment of a grey fumed cooking-pot. Cf. *Throp*, pl. xxvi. 21 and 22 (associated with a hammer-head mortarium in white pipeclay ware, of the type that first appears on Hadrian's Wall *circa* A.D. 300; many more parallels of the same date could be cited).¹

Fig. 27, 1. 1936; Site XIX West, mostly underlying the north wall of Level IV. The greater part of a jug with pinched neck, in hard, rather sandy, grey ware; jars in late second and early third-century deposits on Hadrian's Wall are often of a similar texture. Jugs with pinched necks occur sporadically in all periods from the first century to the fourth (indeed, they long outlast the Roman period), and it is rather from the fabric and the contour of the body of the jug that an estimate of dating is to be derived. In this case the fabric, as has been said, has affinities with that common *circa* A.D. 200, and the rather bulbous body best suits the same period.

Fig. 27, 2. 1936; found a few yards east of the preceding vessel, and at the same level, though not underlying the north wall of XIX West. Most of a mortarium, in fairly hard, reddish ware; the grit is fine and mainly white. A close parallel to the rim occurs at *Poltross Burn*, pl. iv. 7 (first period, "mostly in debris," *i.e.* latter part of the second century), a piece with an illegible name-stamp on it; I have not had an opportunity of examining this piece recently, to see if the stamp can now be deciphered. There is a somewhat similar rim from *Throp*, pl. xxvi. 2; *Corbridge*, 1911, 45 is in a wholly different fabric, and should not be confused with this type; the lighter Hadrianic rims, *Birdoswald*, fig. 13, provide an instructive contrast.

¹ In view of the site-evidence from the north of Britain, it seems probable that the three intrusive rims in the alley at *Birdoswald* (p. 191, h-k) belong to the Constantian rather than the Severan reconstruction; the Constantian builders carried their foundations deep down (*Birdoswald*, p. 171).

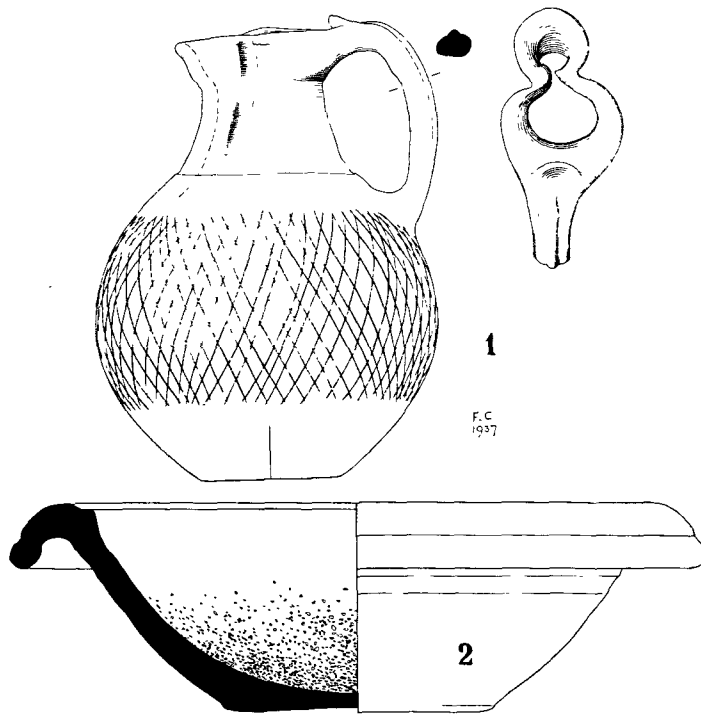


Fig. 27. Stratified vessels from Site XIX. (1.)

Fig. 28. 1936; Site VIII, Level III +.

1. Rim-fragment from a Samian cup; I have not been able to find a parallel to this form.

2. Wall of a Samian cup, form 33; outside, on the lower part, is the name of the owner, Gaius (fig. 36, p. 334 below).

3. Black fumed cooking-pot.

4. Cooking-pot, once fumed; the surface is badly burnt.

5. Fumed beaker.

6. Grey jar; cf. *Corbridge*, 1938, fig. 7, 20 (an Antonine piece).

7. Grey fumed cooking-pot; cf. *Poltross Burn milecastle*, pl. iv. 24 (Period II).

8. Black fumed platter.

9. Similar platter.

10. Dark grey roll-rim platter, fumed but not burnished.

11. Platter rim in light buff ware.

12. Lipless platter in black fumed ware, with lattice scored on the outside.

13. Fumed platter, burnt yellow; cf. *Corbridge*, 1938, fig. 8, 5 (second Antonine level).

From the same deposit came part of a "hunt cup" in blackish Castor ware, and much of a Samian platter, form 18/31, with the incomplete stamp AE[(fig. 36, p. 334, below); as often happened in a wood fire, the

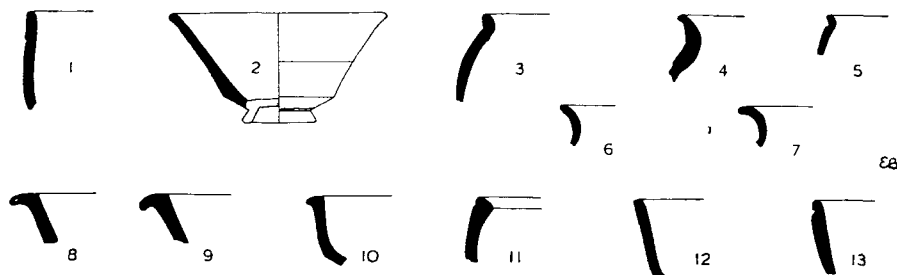


Fig. 28. Rims from Site VIII, Level III-4. (1.)

latter vessel has been burnt black (cf. *Newstead*, p. 230, a platter by Cintugenus, similarly burnt).

Fig. 29. 1937; below flagged foundation of north rampart, west section.

1. Black fumed cooking-pot. For the rim-section, compare *Bird-oswald turret*, pl. xvi. 11 (period I); *High House turret*, pl. xvi. 39 (period I A); *Chapel House milecastle*, pl. liii. 56 (period I B); *Balmuildy*,

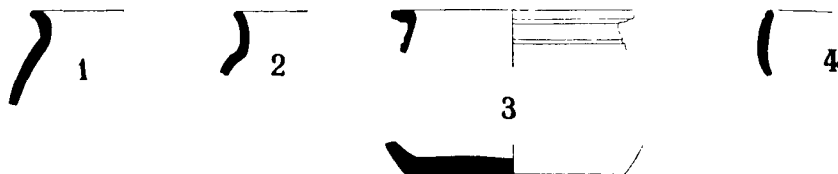


Fig. 29. Deposit below the existing north rampart. (1.)

pl. xlv. 14. It does not seem possible to give a closer dating to the type than *Antonine*.

2. Black fumed cooking-pot. The closest parallels that have been noted are *Chapel House milecastle*, pl. liii. 59 (period I B) and *Balmuildy*, pl. xlv. 13.

3. Rim and base fragments from a jar in a moderately hard, reddish ware. I have not come across any close parallel to the form, but the rim has obvious affinities with the carinated bowls, whose rims no longer show any reeding, that occur in Hadrianic deposits on the Wall.

4. Platter rim in reddish ware with buff-washed surface. The rim-

type does not seem to occur elsewhere in the north of Britain; the fabric suggests a Hadrianic date.

Fig. 30. 1937; XXII West, overlying the filled-in ditch and sealed by later walls.

1. Samian cup, form 33, stamped GNATI·M. For a note on this Antonine potter see p. 334, below.

2. Wall fragment from a similar cup.

3. Rim and wall of a jar in fairly hard, blue-grey ware, grey in fracture. Contrast the rather soft fabric of the Hadrianic jars at *Birdoswald* (p. 191); the rim approaches the high, third-century type.

4. Cooking-pot rim.

5. Beaker rim in black fumed ware; a wall-fragment, from the same deposit, has a handle (cf. *Old Kilpatrick*, p. 46; *Newstead*, p. 256; *Bird-*

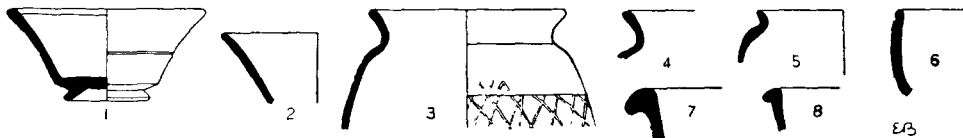


Fig. 30. Sealed deposit from Site XXII West. (1.)

oswald, p. 192). For the rim-section, cf. *Appletree turret*, pl. xvii. 88 (period I B); *Birdoswald*, p. 194.

6. Platter rim, of the well-known Antonine type, *Newstead*, pl. xlviii. 42.

7. Rim fragment from a large platter in coarse, sandy, dark grey ware.

8. Roll-rim platter in fumed ware.

Fig. 31. Stratified pieces from various deposits examined in 1937. Nos. 1-8 come from the burnt layer on Site XXII West (cf. p. 299. above).

1. Flanged bowl, in hard reddish-buff ware; cf. *Caerleon, Archaeologia Cambrensis*, 1929, No. 57 (dated "Hadrian-Antonine").

2. Black fumed platter-rim; cf. *Appletree turret*, pl. xvii. 67 (period I B).

3. Disk-mouthed jug-neck, in brown ware with polished surface. The type is a long-lived one; cf. *Newstead*, fig. 33. 11 and p. 263; *Colchester Museum Report*, 1930, No. 146.30, p. 35; *Templebrough*, pl. xxxiii. B. 223 and p. 115 (a very close parallel).

4. Black fumed platter rim.

5. Worn fragment of a flat-rimmed platter.

6. Worn rim-fragment of a fumed cooking-pot.

7. Reddish-buff jar rim, in coarse soft ware.

8. Black fumed cooking-pot rim; cf. *Chapel House milecastle*, pl. liii. 53 (period I B); *Corbridge*, 1938, fig. 9, 2 (second Antonine period).

9. Black layer overlying roadway, XXII East. Black fumed cooking-pot; cf. *Birdoswald* 42 (period II) for the rim-type, though that is a different type of pot.

10. North rampart, west section; in the bottom of the turf revetment

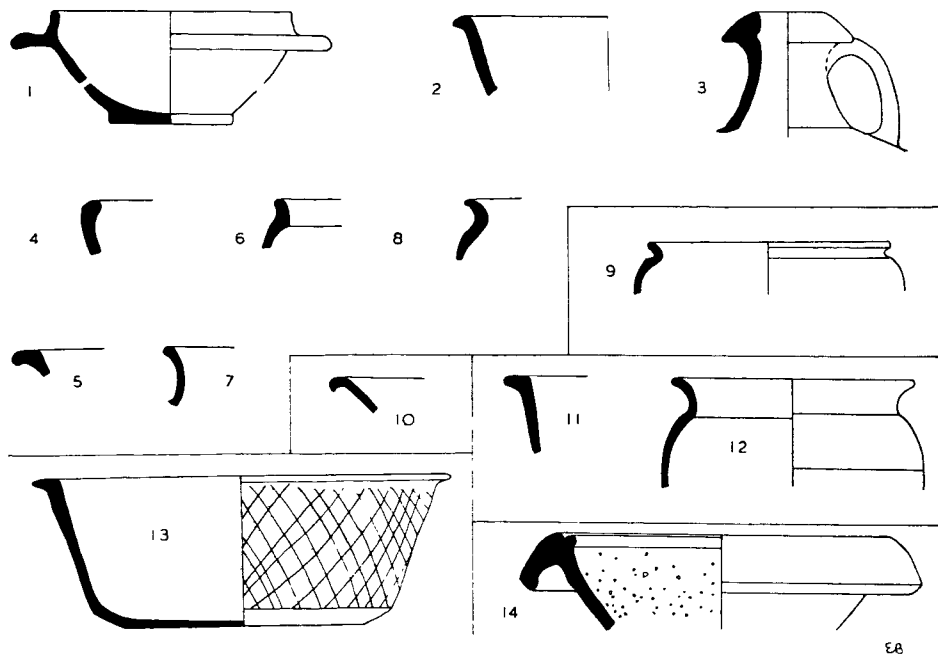


Fig. 31. Stratified pieces from various deposits. (1.)

at the front, beyond the stone kerbing. Rim fragment of a Samian platter, Curle's type 23 (an Antonine type).

11. XXII West, in the body of a buttress supporting the late east-west wall. Fumed flat-rim platter.

12. As No. 11. Grey-black fumed cooking-pot.

13. XXII East, underlying the secondary hearth (cf. fig. 15, above). Much of a grey fumed platter, of the deep chamfered type with flat rim, *Birdoswald* 65 and 66; the rim of the present example is a good deal coarser than on the *Birdoswald* bowls.

14. North of XXII East, sealed by the clay layer on which a side stone of the water-channel rested. Rim-fragment of a small mortarium in hard, red-brown ware, with a fine hæmatite slip on the rim; white

and brown grit. The type is well attested in third-century deposits on Hadrian's Wall; cf. *Poltross Burn milecastle*, pl. iv. 10 and *High House milecastle*, pl. xviii. 113, both in the same fabric as our No. 14, though belonging to larger and more open vessels; another example of the same form, though in a different fabric, has been found at Winshields milecastle (unpublished), as Mr F. G. Simpson has been good enough to inform me. There are two or three vessels of the same type included among the material found at Birrens in 1895 and now preserved in the National Museum of Antiquities (NMA, FP 108, 119), and another, found on Site VIII in 1936, is figured below, fig. 33, 1.

Fig. 32. Pottery from various sites.

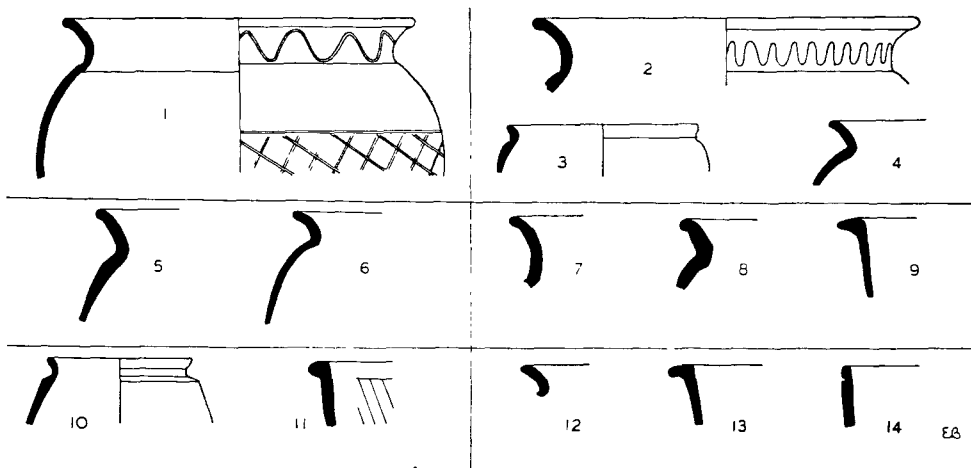


Fig. 32. Pottery from various sites. (1.)

1. 1937; unstratified, from east cut for early north ditch. A large piece from a cooking-pot with high, rather outbent rim. The exterior of the rim still shows the lightly scored wavy line, which is usually regarded as an indication of second-century date: but an example has occurred, on a somewhat similar rim, in an early third-century deposit at *Denton Hall turret* (pl. li. 13), and another in a third-century deposit at *Corbridge* (*Corbridge*, 1938, fig. 7, 14): and the hatching on the body of the vessel, at an oblique angle to the horizontal, and the horizontal scored line above the hatching, are normally met with on cooking-pots of the latter part of the third century and the first half of the fourth. This vessel cannot well be earlier than the third century.

2. 1937; Site XXII West, in the same layer as fig. 31, 1-8. Rim of a cooking-pot belonging to the same general type as the preceding

vessel: about 150 pieces of this and a similar pot were found here, too badly burnt and decayed for reconstruction to be practicable.

3. 1937; origin as No. 2. Rim of a beaker in black fumed ware: one piece has been badly burnt, another is unburnt.

4. 1937; origin as No. 2. Rim of a jar, in the hard, blue-grey ware characteristic of third-century deposits on Hadrian's Wall (cf. *Poltross Burn milecastle*, p. 451); for the sharply outbent rim, cf. *Denton Hall turret*, pl. li. 15, and *Corbridge*, 1938, fig. 7, 3 (these two vessels are both cooking-pots, and both come from third-century deposits).

5. 1936; unstratified. High-rimmed cooking-pot; cf. *Birdoswald turret*, pl. xvi. 21 (Period II); *High House milecastle*, pl. xviii. 120 (Period II).

6. 1936; unstratified. Grey jar, with outbent rim; cf. *Poltross Burn milecastle*, pl. iv. 24 (Period II).

7. 1937; Site XXII East, in or over the black occupation-layer overlying the roadway. Cooking-pot rim, of the same high type as No. 2 above, but lacking the wavy line.

8. 1937; origin as No. 7. Cooking-pot rim; cf. *Appletree turret*, pl. xvii. 83 (Period I B).

9. 1937; Origin as No. 7. Platter rim.

10. 1937; topsoil in section through east rampart. Beaker rim, in friable grey clay, probably burnt. Cf. *Birdoswald*, fig. 15, 42 (Period II).

11. 1937; origin as No. 10. Roll-rim platter.

12. 1937; topsoil in section north of XXII West. Outbent cooking-pot rim.

13. 1937; origin as No. 12. Flat-rim platter.

14. 1937; origin as No. 12. Platter rim.

Fig. 33. Mortaria from various deposits.

1. 1936; Site VIII, Level III +. About half a mortarium in hard, reddish-brown ware, with traces of hæmatite slip on the rim; the interior is thickly sprinkled with a crystalline grit; the spout has been broken off. This is a larger example of the third-century type discussed under fig. 31, 14 above.

2. 1936; Site VIII, Level III +. Mortarium in red-brown ware, once with a dark red slip on the rim; sparse white and brown grit. A somewhat similar rim occurred in Period I "mostly in debris" at *Poltross Burn milecastle* (pl. iv. 6).

3. 1936; Site VIII, Level III +. Light brown ware, with traces of a cream wash, and a name stamp, impressed twice, which I have been unable to decipher.

4. 1936; unstratified. Rim-fragment in rather rough, yellowish-drab

ware without any slip-coating. The fabric and rim-section together leave no doubt that this comes from a mortarium by the potter ANANVS or ANAVS, one of the Antonine potters whose work is most widely distributed in the north of Britain (cf. *Corbridge*, 1938, p. 276).

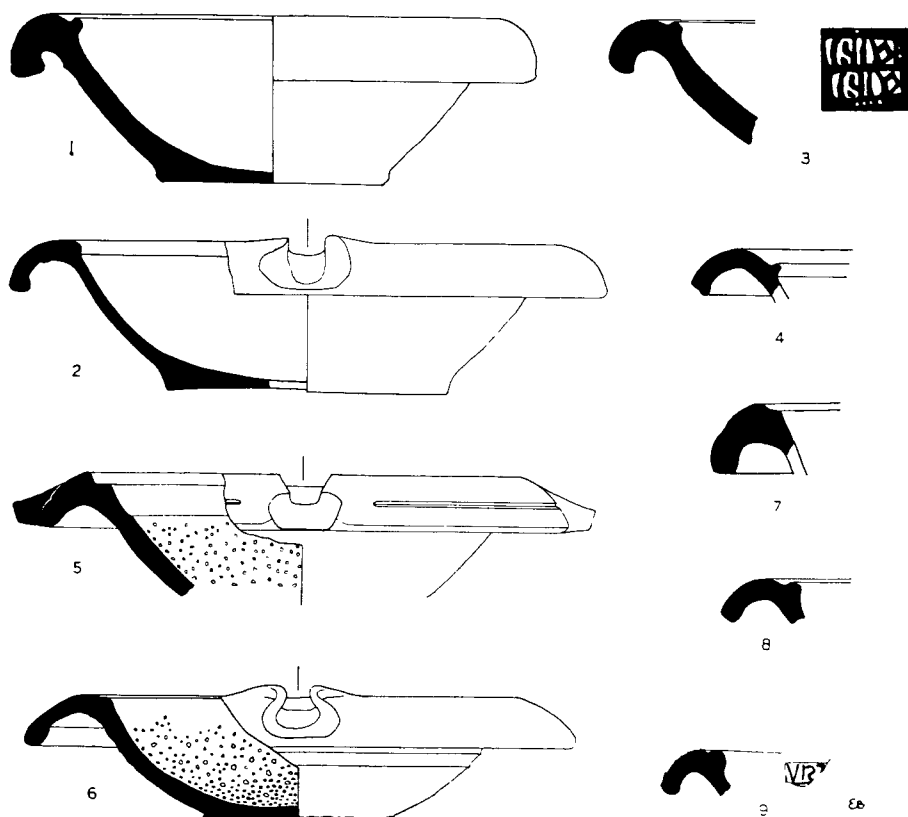


Fig. 33. Mortaria. (4.)

5. 1937; Site XXII West, unstratified. Much of a mortarium in red ware, with a thin, dark red glaze; the spout is small and neat, and there are two lugs or handles. There are one or two examples of the same type in the Corbridge collection; cf. *Wroxeter*, 1912, types 74, 78, where it is suggested that the type was introduced into Britain about the end of the first century, and lasted well into the second, "but their disappearance is not yet dated with any accuracy"; it is extremely uncommon in the north of Britain, and I cannot quote a stratified example; but there are

two or three represented in the material from the excavations of 1895 (NMA, FP 111, 114. and 117).

6. 1937; Site XXII West, unstratified. Hard yellowish buff ware, with brown grit; a potter's stamp is just amissing on either side of the spout; the vessel has been overbaked.

7. 1937; Site XXII East, unstratified. Hardish red ware, with hæmatite wash; cf. *Poltross Burn*, pl. iv. 8 (Period II).

8. 1937: north gate, unstratified. White pipeclay ware, with pink grit thickly sprinkled on a fragment from its base (not drawn). The fabric and grit recur on some examples of the well-known Constantian type of hammerhead mortarium, but the present rim hardly looks as late as that period.

9. 1937; XXII West, in the same deposit as the pieces illustrated in fig. 31, 1-8. Whitish buff ware, with part of the retrograde stamp of *Mossius*; there is a more complete example of the same stamp from Rough Castle (NMA, FR 341), and the potter's name is established by stamps from Lincoln (British Museum, cf. *B.M. Cat.*, M 2793; I have examined the piece myself) and *Wroxeter* (1912, No. 10).

Fig. 34. Four mortarium rims with makers' stamps, from earlier excavations at Birrens, are preserved in the National Museum of Antiquities, and are illustrated in this figure.

1. FP, without a number; stamped AVSTiNi MANu. Stamps of *Austinus*, from at least three different dies, occur at *Ambleside* (CW², xv. p. 56, where it has been misread), *Carlisle* (CW², xvii., pl. xvii. 3), Corbridge and Chesters (unpublished) in the north of England; and at Newstead (unpublished; NMA, no number), *Mumrills* (fig. 94, 1), *Bar Hill* (p. 70), *Balmuildy* (pl. xl. B, 17 and 18) and *Camelon* (NMA, FX 231) in Scotland. This distribution makes it probable that the potter worked in the north of Britain, but there is at present no evidence sufficient to indicate the place where he worked.

2. FP 194, PSAS, xxx. p. 186; stamped]NANI. I have not yet met a parallel to this stamp.

3. FP 193, PSAS, xxx. p. 186, 2; stamped SARR in large letters. *Sarrus* used a large number of dies for his name-stamp, and his mortaria exhibit a wide variety of rim-types and fabrics; there can be no doubt that his period of activity was a long one. His stamps occur at Lincoln (British Museum, two examples; cf. CIL, vii. 1334.9), *Aldborough* (*Reliquiae Isurianæ*, pl. xxxiii.), Corbridge (many examples, as yet unpublished) and Lanchester (unpublished) in the north of England; and at *Newstead* (p. 266, 28), *Rough Castle* (p. 52), *Bar Hill* (p. 70), *Balmuildy* (pl. xl. B, 11), *Camelon* and *Ardoch* (NMA, unnumbered) in Scotland. Haverfield

refers, with reserve, to the reported discovery of a stamp of this potter in a kiln at Hartshill in Warwickshire (*VCH Warwicks.* p. 246); the variety in fabric, already referred to, seems suitable for a potter working in forest country and moving from place to place in search of fuel.

4. FP 101; stamped GRATINI. I have not yet noted any rim on which the complete stamp of *Gratinus* occurs; in most cases the first part of it has been impressed on the rim, as here, while once or twice it is the first two letters that are missing. In contrast to Sarrus, Gratinus exhibits little variety in fabric or rim-section. His stamps have been recorded at *Templebrough* (No. 5), *Wilderspool* (*Warrington's Roman Remains*, p. 64, misread), *York* (CIL, vii. 1331.52, wrongly inserted among the amphora stamps) and *Corbridge* (unpublished) in England; in Scotland at *Newstead* (p. 266, fig. 35, 2, 10, and 11; NMA, FRA 1454, 1461, 1462) and *Balmuildy* (pl. xl. 6).



Fig. 34. Stamped mortaria. (1.)

I have been unable to find the incomplete stamp]IAR, referred to in PSAS, xxx. p. 186, 3.

It is desirable to add a note on the general question of mortarium-stamps, which has hitherto been unduly neglected.¹ There have been two main tendencies: either to regard such stamps as having mainly local interest, as the products of potters merely serving their own restricted markets,² or to take cases of identity of name between makers of mortaria and makers of Samian ware as evidence for the manufacture of mortaria by the latter.³ Neither view is wholly incorrect; it is clear that many potters did serve a restricted market, for example *Satu(r)inus* of Corbridge, whose stamp occurs there and at Newstead,⁴ but has not yet been noted elsewhere: or the potter whose stamp IME· or CEE· or both in conjunction is at present restricted to six sites in Scotland.⁵ Again, the graffiti from La Graufesenque reveal that mortaria were made

¹ The best discussion which I have come across is that by Mr S. N. Miller, *Balmuildy*, p. 79.

² So Haverfield in AA³, viii. p. 194; May, *Warrington's Roman Remains*, p. 60.

³ Ritterling, *Hofheim*, pp. 310-11; Oswald and Pryce, *Terra Sigillata*, p. 211; Macdonald and Curle, PSAS, lxiii. p. 527.

⁴ Cf. AA³, viii. p. 194, and *Newstead*, fig. 35, 25; the latter stamp (NMA, FRA 1477) is a far completer impression from the Corbridge die than the published drawing suggests.

⁵ *Newstead* (four), *Rough Castle* (one), *Ardoch* (two), *Camelon* (three); *Balmuildy* (two), *Old Kilpatrick* (one). I have examined all but the last three stamps; drawings and full references will be given in a subsequent paper.

by many South Gaulish potters, in a period when mortaria in Samian ware are not met with.¹ But there are very few cases of apparent identity which will bear the test of a close scrutiny; and while a study of the distribution of mortarium-stamps will often (as in the case of *Sarrus*, above) show a far more than purely local market, it demonstrates that the stamps from second-century deposits in the north of Britain must be the products of British potters, even though there were Samian potters of the same names working in the same period. And in many cases there is a demonstrable disparity in date between the two potters whose identification has been attempted; thus, the *Sarrus* who made Samian ware is dated to the time of Nero,² while the mortarium-maker belongs to the Antonine period; the latter probably worked in Warwickshire, while his namesake had been a potter of La Graufesenque. Even where there is identity of period, identification is not by any means certain; for example, the Flavian mortarium-maker (*L. Atisius*) *Secundus*, to judge by the distribution of his products and by his *nomen*,³ worked in Gallia Narbonensis, and cannot be identified with the *Secundus* of La Graufesenque familiar to students of Samian ware; nor can *Albinus*, *Marinus* and *Matugenus*, who made mortaria in the Flavian period, be identified with the contemporary Samian potters of La Graufesenque, for their wares often bear the additional stamp *Lugduni factum*—"made at Lugdunum." In effect, then, it is not permissible to generalise; each case of apparent identity must be examined on its merits; but where I have made such an examination, the case for identification has usually fallen to the ground. It is clearly desirable that the mortarium-stamps from Britain should be properly collected, so that further light can be thrown on the other question, the distribution areas and working-places of the different potters; I have already obtained some very interesting results from a preliminary study of this kind, and hope to lay a paper on the Scottish material before this Society in the near future.

Fig. 35. 1937; in and close to the water-channel, west of the tank (fig. 13 and p. 307 above). Much of a very large storage jar in hard, whitish buff ware; its height was $17\frac{3}{4}$ inches, and maximum diameter $12\frac{1}{2}$ inches. Below the rim is a frilled strip; there is a double cordon round the neck, and a single one just above the lower attachments of the two handles; the cordons have been roughly decorated by notches cut with a wheel; and on the shoulder there are two parallel grooves, lightly incised and terminating a short distance from the handles. The

¹ Cf. Hermet, *Les graffites de la Graufesenque*, 1923, pp. 149-50 *et al.*

² Oswald, *Index of Potters' Stamps*, p. 281.

³ Cf. CIL, xii. 764, from Arles.

base is well formed, and has a groove demarcating the footstand on the under side. I have found no very close parallels to this handsome vessel, but there are some fragments with a similarly notched double cordon in the Corbridge collection, and cf. *Niederbieber*, type 73A, fig. 42

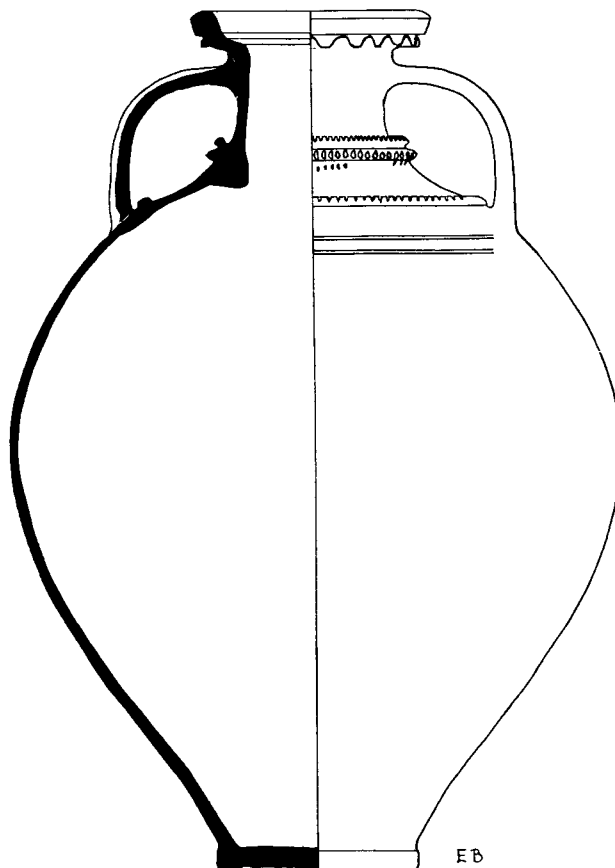


Fig. 35. ($\frac{1}{4}$.)

(a rather squatter vessel, with three handles, and somewhat similar incised cordons below the rim and on the shoulder), and *Caerleon*, *Archaeologia Cambrensis*, 1932, fig. 57, 118 (only about two-thirds the size of the Birrens jar, rather different in fabric and in form, but with a frilled strip below the rim): the fabric seems not unlike that of the Colchester face-urns, which normally have similar frilling. Its find-spot shows that this jar can be assigned to the last structural period at Birrens. *Early fourth century.*

Fig. 36. Graffiti and potter's stamps on Samian ware.

1. 1936; Site VIII, Level III+. Owner's name, GAI—"the property of Gaius," scratched on the wall of the Samian cup, fig. 28, 2.

2. 1937: Site XXII West, overlying the filled-in ditch and sealed by later walls (*cf.* p. 300 and fig. 30, where other pottery from the same deposit is illustrated). Owner's name, apparently [V]ITALIS, scratched on the under side of a base fragment from a Samian platter of form 18/31.

3. 1936; Site VIII, Level III+. On a platter of form 18/31, burnt black in a wood fire: the first two letters of a potter's stamp, AE[. There are too many second-century potters whose names begin thus,

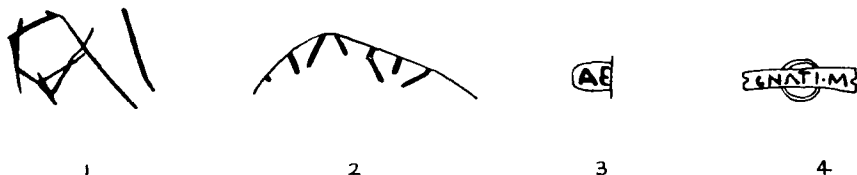


Fig. 36. Graffiti and potters' stamps on Samian ware. (2.)

for an attempted restoration of the name to be profitable; *cf.* PSAS, lxxv. pp. 433-34.

4. 1937; origin as No. 2. On a cup of form 33 (fig. 30, 1), the stamp GNATI·M. Gnatius is assigned conjecturally to La Madeleine by Dr Oswald in his *Index of Potters' Stamps*, p. 138; three other examples of his stamp, none of them complete, have been recorded from Scotland (PSAS, lxxv. p. 437); the forms made by him justify Dr Curle's attribution of his work to the Antonine period (*Newstead*, p. 229 with p. 236), but there do not seem to be any records of his stamp occurring in stratified deposits.

C. Glass.

Only one vessel was represented by a fragment large enough to permit a drawing being made: that was part of a hemispherical cup, in colourless cut-glass (fig. 37), found in 1936 on Site VIII, Level III+. The facets on this cup are rather more squat than on the straight-sided beaker, in similar technique, found at Birrens in 1895 (PSAS, xxx. p. 109). Cut-glass vessels in this style of decoration have a wide distribution, but do not seem to occur very commonly anywhere; *cf.* Dr James Curle's valuable discussion in PSAS, xxx. pp. 110-1, where a date late in the Roman period is suggested for the Birrens beaker. Since 1895, evidence has come to light which suggests the possibility of a considerably earlier

date; thus, Oelmann, in his monograph on the pottery from the Roman fort at Niederbieber in Upper Germany,¹ discussing this type of decoration, quotes a number of glass vessels of closely related form and assigns them to the latter part of the first century;² and an extremely close parallel to the 1895 piece has been found in a sealed deposit antedating the Trajanic reconstruction of the legionary fortress at Caerleon.³ But the evidence cited by Dr Curle is sufficient to demonstrate the persistence of the type into the late Roman period, and the stratification of the present piece does not accord with an early date: if it had been a stray from an earlier level, it could hardly have escaped breaking into fragments, for it is thin, delicate ware; it is probable, therefore, that it belongs to

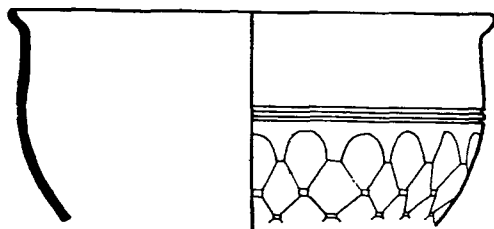


Fig. 37. ($\frac{1}{2}$.)

the vanished Level IV, like the mortarium, fig. 33, 1 and the cooking-pot, fig. 28, 7, and should be assigned to the third century.

The glass from the burnt deposit on Site VIII, Level II, included part of the footstand of a platter in colourless glass, and very many pieces from one or more rectangular bottles in greenish glass. It has not yet been possible to put together enough of the fragments to show the form of vessel represented, but there is a handle similar to that of *Hofheim*, type 12,⁴ and there are at least three plane surfaces ornamented with two concentric circles, flanked by single upright trees.

D. Bronze Objects.

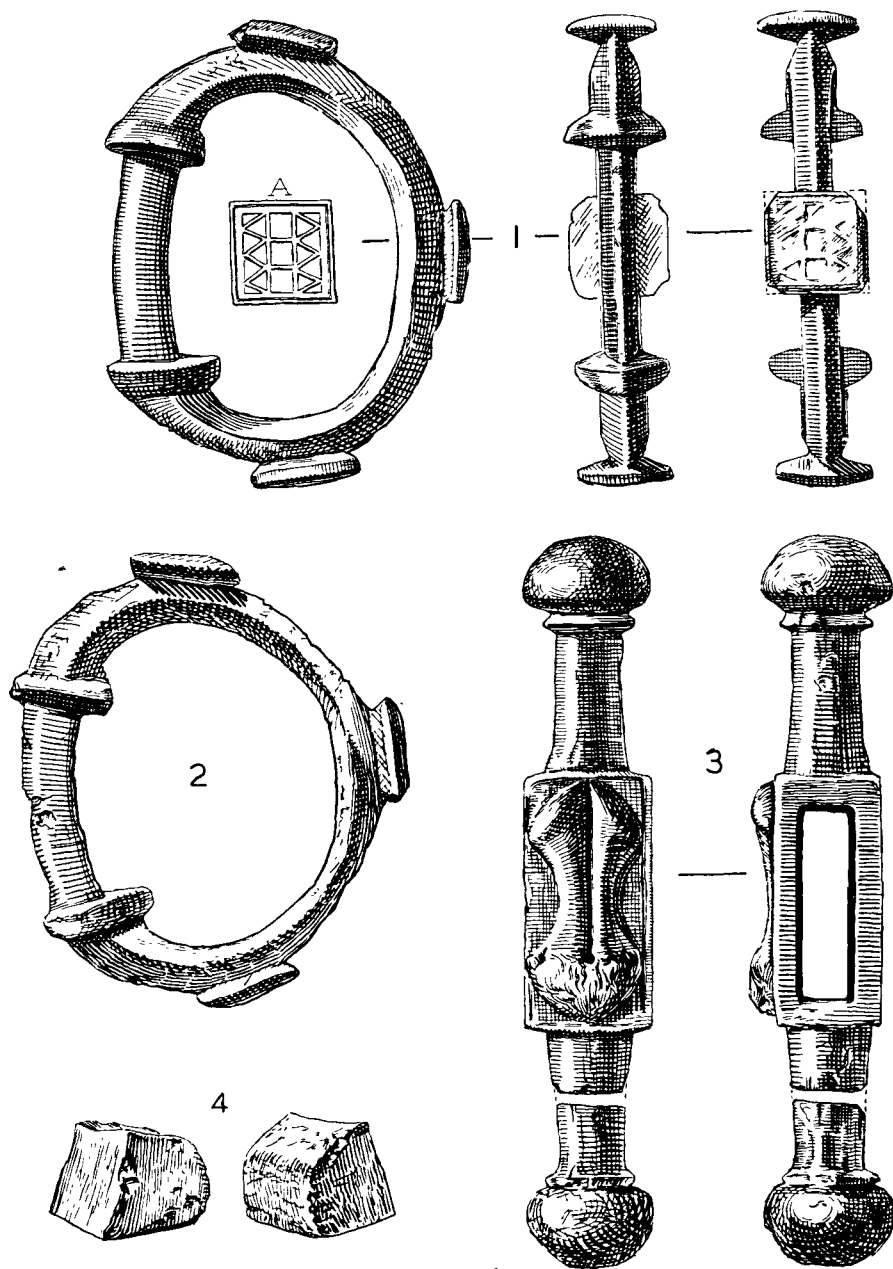
I had hoped to be able to include a full discussion of the bronze objects by our Fellow Mr H. E. Kilbride-Jones, but, since he has been prevented by pressure of other work from completing his contribution, it has become necessary for me to provide a brief description, which I hope that he will be able to supplement on another occasion, in the

¹ *Niederbieber*, p. 8; cf. also PSAS, lii. p. 219.

² The evidence cited by Oelmann does not appear decisive, but the Caerleon parallel proves his point.

³ *Archæologia Cambrensis*, 1929, fig. 18, 2.

⁴ *Hofheim*, pl. xxxviii. and p. 373; the Hofheim type, however, is not rectangular but cylindrical.



J. ASTANFIELD

Fig. 38. Bronze objects. (1.)

course of the wider study of the bronzes of native manufacture which is so badly needed.

With the exception of fig. 38, 4, an unstratified find made on Site XXII East in 1937, all the following objects were found in the burnt deposit, Level II, on Site VIII in 1936, and are therefore to be found now in the Dumfries Museum.

Fig. 38, 1 and 2. Terret rings, ornamented each with three square bosses once inlaid with enamel, traces of which remain, let into the geometric framework illustrated in fig. 38, 1 A. A third ring of the same type and probably from the same set was also found, in fragments. The type is a well-known example of native metal-work; cf. *Newstead*, p. 302; the decoration invites comparison with that on other categories of native craftsmanship.

Fig. 38, 3. Cheek-piece for a bridle; on the side is a decorative feature in relief to which, as Mr Kilbride-Jones points out to me, there are many counterparts on a variety of bronze objects found in the north of Britain.

Fig. 38, 4. Indeterminate object, perhaps a weight.

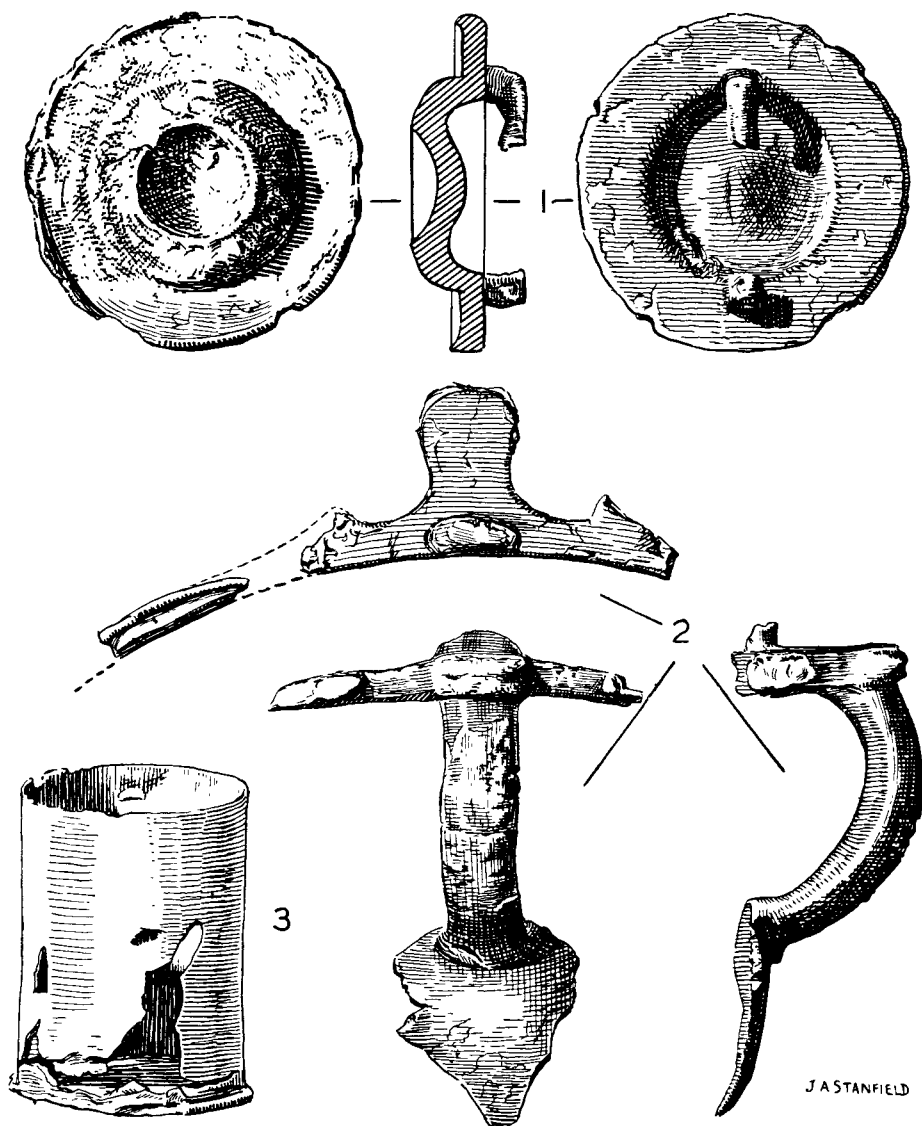
Fig. 39, 1. Ornamental stud for attachment to harness; there has been a central decoration, now missing, as the circular depression into which it fitted shows.

Fig. 39, 2. Handle from a small bronze jug. A more elaborate counterpart to this handle, from the Ruberslaw hoard found in 1863, is illustrated in Dr James Curle's paper on objects of Roman and Roman provincial origin, *PSAS*, lxxi., 1932, p. 367, fig. 51. Unlike the preceding items, this object is not of native manufacture: parallels may be found throughout the Roman world.

Fig. 39, 3. Bronze shoe for a wooden pole or shaft.

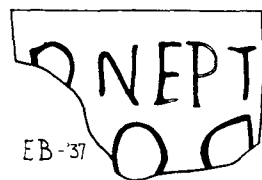
It is hardly necessary to stress the interest of this group of objects from Site VIII, as a homogeneous deposit assignable to the end of a period which (as is shown elsewhere in this paper) closed shortly before A.D. 158; but it seems worth noting that the terret rings and bridle-piece, while they attest the presence of mounted men, need not be taken to show the presence of a cavalry regiment at Birrens: for both the second cohort of Tungrians and *coh. I Nervana Germanorum* (the only other regiment known to have been in garrison there at some time¹) were *equitatae*.

¹ CIL, vii. 1063 and 1066.

Fig. 39. Bronze objects. ($\frac{1}{4}$.)

E. *Inscription.*

The only inscribed stone was the upper part of a small altar, found in 1937 partly protruding above the turf on Site XXII West. The letters (fig. 40) are not deeply cut, and the text presents a difficulty in the last symbol in line 2; but it seems possible to obtain the following reading: *d(eo) Nept[un]o Cl(audius)* [. . . —“Claudius . . . (fulfils a vow) to the god Neptune.” It need occasion no surprise to find a dedication to Neptune at an inland site like Birrens; compare Sir George Macdonald's observations on the altar, similarly dedicated, from Castlecary.¹

Fig. 40. ($\frac{1}{4}$.)F. *Coins.*

Only one coin was found in 1936, a bronze one so far decayed that nothing could be made of it. The excavations of 1937 were more fortunate, producing eleven coins in all (as many as are recorded in the report on the excavations of 1895); but all of them were in poor condition, and only six could be deciphered. I am indebted to Mr W. Percy Hedley for the following list:—

No.	Find-spot.	Denomination.	Identification.	Date.
1	XXII East.	Denarius.	Trajan (M. 98, C. 120).	A.D. 103-111.
2	N. rampart.	Denarius.	Trajan (M. 331, C. 190).	A.D. 114-117.
3	XXII East.	Sestertius.	Trajan.	
4	XXII East.	As.	Trajan.	
5	XXII West, in black layer.	As.	Antoninus Pius (M. 934, C. 117).	A.D. 154-155.
6	XXII East.	As.	Antoninus Pius (M. 934, C. 117).	A.D. 154-155.
7	N. rampart, below outer cheek.	As.	Illegible.	
8	XXII West.	As.	Illegible.	
9	XXII West, in black layer.	Denarius.	Illegible.	
10	XXII East.	Denarius.	Illegible.	
11	S. of XV.	Denarius.	Illegible.	

It will be seen that no further light is thrown on the occupation of the fort by any of these coins; Nos. 7 and 9, if they had been decipher-

¹ RWS², p. 422: cf. also Domaszewski, *Abhandlungen zur römischen Religion*, 1909, pp. 19-21.
VOL. LXXII.

able, might have been of value, but the coin of Antoninus Pius, coming from the same layer as No. 9, is clearly a good deal earlier than the terminal date of the deposit in which it was found (*cf.* p. 346, below).

It remains to mention two coins shown to us by Mr A. Cunningham of Larchcroft, Ecclefechan; they are said to have been found during the excavations at Birrens in 1895 by one of the workmen employed there, from whose daughter Mr Cunningham acquired them. The first, a worn bronze of Domitian, is nothing out of the ordinary, but the second is an *antoninianus* of the Gallic usurper Victorinus, A.D. 268-70. Since the pottery found in 1936 and 1937 includes material sufficient to show that the fort was occupied throughout the third century, there is no need to question the attribution of this coin to Birrens, though it must be admitted that its credentials might have been better.

Mr Cunningham also showed us a coin found about 1935 in repairing a stone dike at Dockenflat, near Ecclefechan, which it will be convenient to place on record here. It is a bronze coin of Maxentius, in mint condition; obverse, MAXENTIVS P F AVG, reverse CONSERV VRB SVAE, mint-mark PT.

VII. CONCLUSIONS.

A correlation between the structural periods observed at Birrens and the successive phases of the Roman occupation of the north of Britain may not yet be attainable with certainty, but it seems necessary to attempt one, if only to show in what respects our evidence requires to be supplemented. It has been shown that there is still uncertainty, at Birrens itself, as to the precise relationship between the periods of the rampart and those of the internal buildings, and between the levels in the unenlarged fort and those in the northward extension: the following attempt to define the relationship, and to connect the various periods with the general history of the Roman occupation, is put forward with all reserve.

In the first place, it will be convenient to emphasise the distinction between the evidence relating to the north of Britain in general, and that derived from Birrens itself, for the historical framework into which the structural periods have to be fitted; the latter category is the simpler, and may be summarised first. Apart from a piece or two to suggest the possibility of an Agricolaan occupation,¹ the pottery series starts with the time of Hadrian and continues up to the close of the third century, while one late third-century mortarium,² underlying the water-channel inside the north rampart, shows that the latest structural period may be

¹ *Cf.* pp. 290, 321, above.

² Fig. 31, 14.

assigned to as late as *circa* A.D. 300. Within the period of nearly two hundred years so defined, there are as many as four periods of stone buildings and (if it does not belong to the Agricolan occupation) one of wood, to be correlated with historical changes; but while the stratified pottery, as has been shown, suggests a partial time-table, Birrens itself has only produced direct evidence for the date of one such change, namely, the inscription of A.D. 158. In order to resolve the problem, we must turn to the general evidence already referred to.

The complexion of the pottery series allows us to begin our survey with the building of Hadrian's Wall, *circa* A.D. 122. At that time a number of forts were constructed, not in immediate touch with the new *limes*; in particular, the outposts at Bewcastle, Netherby and (as we are now in a position to add) Birrens itself. It may be noted that the excavations recently conducted at Bewcastle by Mr Richmond show the Hadrianic fort there to have had buildings of timber,¹ like the mile-castles westward from the Irthing on Hadrian's Wall,² and perhaps the first fort at Castlesteads;³ this might be taken to support the view that the initial timber period at Birrens should be assigned to the time of Hadrian and no earlier.

The next stage comes with the reoccupation of the north of Britain, up to and beyond the isthmus between Forth and Clyde, by the governor Lollius Urbicus in the early years of Antoninus Pius; at this time stone forts, later retained as outposts of Hadrian's Wall, were built at Risingham and High Rochester:⁴ there is considerable evidence to show that a rearrangement of garrisons took place in the forts of the Hadrianic frontier zone:⁵ and it is conceivable that, on such an occasion, it may have been found convenient to replace timber buildings by buildings of stone in a fort like Birrens, to suit the requirements of a fresh regiment. But it should be noted that no such change occurred at the nearby fort of Bewcastle.

After the governorship of Lollius Urbicus, the available evidence falls into two groups, associated with the Hadrianic and Antonine frontiers respectively.

*Hadrian's Wall.*⁶—Here the first period, inaugurated twenty years previously, continues as far as the forts are concerned without interruption until the close of the second century, when a destruction occurs which can now be assigned to the year 196, when Clodius Albinus was defeated in Gaul by Septimius Severus and the latter's first governor of Britain.

¹ CW², xxxviii, pp. 195-237.

² Cf. JRS, xxv, pp. 1-18, especially p. 8.

³ CW², xxxiv, p. 164.

⁴ AA⁴, xiii, pp. 170-98.

⁵ Cf. JRS, xxii, pp. 55-59; AA⁴, xii, pp. 199-200.

⁶ Cf. CW², xxx, pp. 199-202; AA⁴, vii, pp. 167-69.

Virius Lupus, found it necessary to buy off the Mæatae, who had created the widespread havoc to which each fresh excavation bears added testimony. The second period opens with the reconstruction by Virius Lupus and his successor Alfenus Senecio, and closes in a comparable destruction at the end of the third century, when the usurper Allectus was engaged in his unsuccessful struggle against the Cæsar Constantius Chlorus; and the building-record found at Birdoswald in 1929 allows us to place the beginning of the third period *circa* A.D. 300, as the work of Constantius Chlorus himself.

Thus far Risingham, High Rochester, and Bewcastle can be shown to have experienced the same historical sequence as Hadrian's Wall, but in the fourth century a divergence occurs. The third Wall period ends in destruction by the Picts in A.D. 367: at Risingham and Bewcastle the pottery series reaches up to (but not beyond) that year, but there is an intervening destruction followed by rebuilding, which it seems justifiable to assign to the expedition of Constans in A.D. 343; at High Rochester, on the other hand, the pottery series does not extend so far, there is no such rebuilding, and it seems that the site was omitted from the reconstruction carried out by Constans. In view of the lack of late pottery from Birrens, it may well be that it shared the fate of High Rochester; we will be justified in putting forward *circa* A.D. 340 as the latest date for its occupation by the Romans. But whereas High Rochester has three structural periods to cover the years from *circa* 140-340, Birrens has at least four and, as we have seen, may have five. If it had been four only, it would have been a simple matter to suggest that the rebuilding in A.D. 158, without a counterpart at High Rochester, explains the difference; but we must return to the question presently.

The fourth and closing period of Hadrian's Wall, opening with reconstruction by Count Theodosius in A.D. 368-9, and continuing at least until the usurpation of Magnus Maximus, has no known counterpart on any site to the north of the Wall, so that it need not detain us further.

The Wall of Pius.—When we turn to consider the history of the Antonine frontier, we are on sure ground in stating that it falls into three structural periods, but the attribution of those periods is open to question. The most recent view is that put forward by Sir George Macdonald, in the second edition of *The Roman Wall in Scotland*,¹ where the periods are assigned to the following time-table: I, *circa* A.D. 142-155/8; II, *circa* A.D. 158-181; III, *circa* A.D. 184-185. But that view is so largely based² on an interpretation of the history of Birrens which has been shown by

¹ RWS², pp. 178-82.

² RWS², p. 478.

the recent excavations to be untenable, that it will be necessary to consider the evidence afresh.

We may start our reconsideration with a statement of principles. In any case of conflict between literary and archaeological evidence, the latter clearly needs to be examined with great care before it can be allowed to override the former; and if the conflict is between positive literary evidence and the negative evidence of archaeology, it will need an overwhelming argument to justify disregard of the literary record. Such a conflict exists in relation to the Roman occupation of Scotland, and the negative archaeological evidence has been generally permitted to override that of our literary sources.

Briefly, the key-stone of the current archaeological interpretation is the absence of coins later than the time of Commodus from all Roman forts in Scotland, with the exception of Cramond; this absence is held to justify the view that, with that exception, none of those forts was occupied in a later period.¹ At first sight the argument may seem a sound one; but it should be remembered that the total number of coins from the Antonine Wall is not very great, and it may be useful to point to the case of Housesteads fort on Hadrian's Wall, where the excavations of 1898 produced as many as 129 coins, which did not include a single one between the time of Commodus and that of Elagabalus;² yet that fort continued in Roman hands until the close of the fourth century, and it has produced fragments of a Severan building-inscription.³ And when we turn to the literary evidence, which has been unaccountably neglected, it seems to make it certain that Roman Scotland was reoccupied for at least four years, from A.D. 207 until 211.

In the former year, as Cassius Dio records,⁴ Severus in Rome was greatly disturbed because he was unable to put a stop to the activities of a notorious brigand in Italy, at a time when his generals were winning victories in Britain. The scene of those victories is not recorded, but it can hardly have been south of Cheviot: for the building-record from Risingham, dated *circa* A.D. 205,⁵ shows that reconstruction was already in progress there—and it is perhaps significant that the work is described as being under the superintendence of the procurator, Oclatinus Adventus. The inference seems justified that the governor, Alfenus Senecio, had entrusted the work of reconstruction to the procurator, while he himself followed the tide of campaigning further north. There is no question that it was farther north that Severus and Caracalla conducted their campaigns against the *Mæatae* and the *Caledonians*, with the avowed

¹ RWS², p. 480; PSAS, lii. p. 275.

³ AA⁴, ix. pp. 233-34.

⁴ Book lxxvi. 10.

² AA², xxv. p. 298.

⁵ CIL, vii. 1003.

object of conquering the whole of Britain;¹ and, after the death of Severus in A.D. 211, we learn that Caracalla made peace with the enemy and withdrew the garrisons from their territory.²

When we find the archæological evidence from the forts on the Antonine Wall showing a brief final occupation, ending in peaceful withdrawal, it seems difficult to resist the conclusion that this occupation should be assigned to Severus and the withdrawal to Caracalla, as the literary sources suggest, and that the absence of coins of Severus is as much an accident there as at Housesteads.

In that case we are left with two structural periods to cover the interval between A.D. 142 and the Severan reoccupation; and, in view of the evidence available, it seems possible to suggest two alternative time-tables. (1) If Ulpius Marcellus reoccupied the northern *limes* in A.D. 184,³ the second period will presumably have ended in the same destruction as overtook Hadrian's Wall in A.D. 196; and that leaves A.D. 142–181 for the first period, which terminates in the barbarian incursion recorded by Cassius Dio.⁴ In that case the reconstruction at Birrens in A.D. 158 will have had no counterpart on either Wall, and the historical explanation for it must be sought in the immediate neighbourhood—a possibility which is not weakened by the geography of the area. (2) If Marcellus contented himself with drastic punitive operations,⁵ and reverted to the Hadrianic frontier system, leaving the Antonine *limes* unoccupied, we are at liberty to look for an occasion between A.D. 142 and *circa* 181 for the end of the first and the beginning of the second period; and that occasion might well be contemporary with the need for reconstruction at Birrens, though it may be doubted whether there was any necessary connection between events in what is now Dumfriesshire and on the northern *limes*.

The Periods at Birrens.—It appears, then, that there were two structural periods in the forts of the Antonine Wall between A.D. 142 and the end of the century, as against the single period on Hadrian's Wall. High Rochester, Risingham, and Bewcastle are in the same case as the latter, while Birrens, with the reconstruction of A.D. 158, seems to compare more closely with the former. It is time to consider whether we can arrive at a closer correlation of the periods at Birrens.

(1) *The First Period.*—This is marked by the timber buildings of which traces were found below Sites XIX West and VIII. In favour of an Agricola date is the apparent difference in alinement noted on

¹ Cassius Dio, Book lxxvi. 13.

² Cassius Dio, Book lxxvii. 1; cf. Herodian, iii. 15. 6.

³ Cf. RWS⁴, p. 479.

⁴ Book lxxii. 8.

⁵ *Ibidem*.

the latter site; the cooking-pot rim in the Dumfries Museum¹ seems clearly pre-Hadrianic, and the Samian bowl from this level² might belong to the same period, of which Curle 11 is one of the most characteristic types. On the other hand, it has been pointed out that there is no need to postulate a date earlier than Hadrian for that particular piece, and the fact that the Hadrianic forts at Bewcastle and perhaps Castlesteads were of timber may seem to justify assigning the first period to that emperor. Further deep digging, within the area where timber buildings have been noted, is plainly required to settle the point.

(2) *The Second Period.*—The timber buildings are replaced by stone barracks in alinement with the existing ramparts: if the inference drawn from the position of the post-holes on Site VIII³ is correct, the first period in the section through the west rampart, and the early north rampart, will belong to this period. The small yield of pottery from Level II on Site XIX West, and from the lowest level on Site XXII West, is consistent with an attribution of this period to the years *circa* 122-158, but here too further pottery is required to confirm the dating.

(3) *The Third Period.*—This brings the reconstruction of Level III on Sites XIX West and VIII, the latter yielding a fair amount of late second-century pottery;⁴ the material found underlying the visible north rampart⁵ justifies placing the extension of the fort, and with it the second rampart-period in the west section, and the first stone buildings on Site XXII, in this period, which may be dated A.D. 158-*circa* 196. It should be observed that pottery evidence from the first period of the northward extension is still badly needed; at present the platter from Site XXII East⁶ is the only piece.

(4) *The Fourth Period.*—This period opens with the Severan reconstruction, as the deposit sealed below Level IV on Site XIX West,⁷ and pieces from Level III + on Site VIII⁸ and the second level on Site XXII East,⁹ allow us to infer. It seems reasonable to assign the thickening and refacing of the north rampart to the same period,¹⁰ particularly because there is a later structural phase there, which must be reserved for the final period.

(5) *The Fifth Period.*—The beginning of this period is to be assigned to Constantius Chlorus, on the strength of the mortarium found underlying the water-channel near the north rampart,¹¹ and the cooking-pot

¹ Cf. p. 290, above.

⁴ Cf. fig. 28 and fig. 33, 2-3.

⁷ Fig. 27.

² Fig. 26, 1.

⁵ Figs. 22, 23, and 29.

⁸ Figs. 28, 7 and 33, 1.

³ Cf. p. 292, above.

⁶ Fig. 31, 13.

⁹ Fig. 31, 9.

¹⁰ Cf. p. 305, above: the Samian rim, fig. 31, 10, which is clearly an Antonine type, was found in the bottom of the turf revetment at the outside, where it appears to represent a refacing; this was the only stratified evidence for the second period of the north rampart, for the remaining pieces were sealed by its original structure.

¹¹ Fig. 31, 14.

rim among the debris overlying Level IV on Site XIX West.¹ Much of the "secondary" work detected in 1895 probably belongs to the same period, whose maximum extent may be put as from *circa* A.D. 300 until 340; the aqueduct, and the third period in the north rampart, belong to the same stage.

The situation on Site XXII West still presents some difficulty. There we have three surviving levels subsequent to the extension of the fort, and of these the second has produced the pottery illustrated as figs. 24, 3 and 4; 31, 1-8; 32, 2-4; and 33, 9. The detailed discussion of that material shows that the bulk of the pieces can be paralleled in the latter part of the second century rather than in the third; yet on the above consideration of the periods at Birrens the first stone buildings, at the underlying level, ought to belong to that period. There are two alternative explanations to put forward. (a) It has been noted that no pottery was found at the same level as the first stone buildings,² and that they were largely reduced to their clay and cobble footings. It seems possible that, at the Severan reconstruction, all the structures in this area were demolished and the debris was then spread evenly over the site before fresh buildings were put up, the top layer of the spread being composed of occupation material from a neighbouring building. (b) Less likely is the suggestion that the pottery should be taken to show the persistence of the types concerned into the third century, though there are certainly one or two pieces for which a third-century date seems preferable.³ Here, too, further digging is urgently needed to settle the problem.

Summary.—The occupation of Birrens did not end, as had been supposed, before the close of the second century, nor was it confined to two structural periods. On the contrary, there were five such periods, carrying its occupation at least from the time of Hadrian, and perhaps from the governorship of Agricola, until some time in the first half of the fourth century. Further excavation is required to fix the apportionment of those periods to the phases of the Roman occupation, and to the structural sequence in the rampart and on different sites in the interior; but it seems justifiable to put forward the following provisional time-table:—

Period I: a fort with timber buildings, on a different alinement to the fort now visible. *Circa* A.D. 80.

Period II: the first stone fort, with turf rampart lacking a foundation, over fifty feet shorter than its successor. *Circa* A.D. 122-158.

¹ Fig. 26, 4.

² Cf. p. 299, above.

³ Fig. 32, 2-4.

Period III: the fort enlarged, and the buildings not within the extension reconstructed. A.D. 158-196.

Period IV: reconstruction of rampart and internal buildings. *Circa* A.D. 205-297 (=Period II on Hadrian's Wall).

Period V: further reconstruction, and the provision of the water-supply system recently detected. *Circa* A.D. 300-340 (=the penultimate period at Bewcastle, the last period at High Rochester, and the first part of Period III on Hadrian's Wall).

And, in view of the considerations advanced above, it seems likely that the explanation of the reconstruction required in A.D. 158 is to be sought in the history of the immediate neighbourhood rather than in the main course of events affecting the Antonine Wall, where two structural periods of second-century date are to be observed, or Hadrian's Wall, where there is only one.

II.

EXCAVATIONS CARRIED OUT BY H.M. OFFICE OF WORKS
IN THE BRONZE-AGE LEVELS AT JARLSHOF IN 1937.
BY PROFESSOR V. GORDON CHILDE, D.LITT., D.Sc.,
F.S.A. SCOT.

When I arrived on 14th July an area, north of Bronze Age Dwelling No. II, in the north-east corner of our land had already been cleared under instructions from Mr Richardson. Some ruinous Viking floors and wall stumps were exposed along the western margin of the area, but

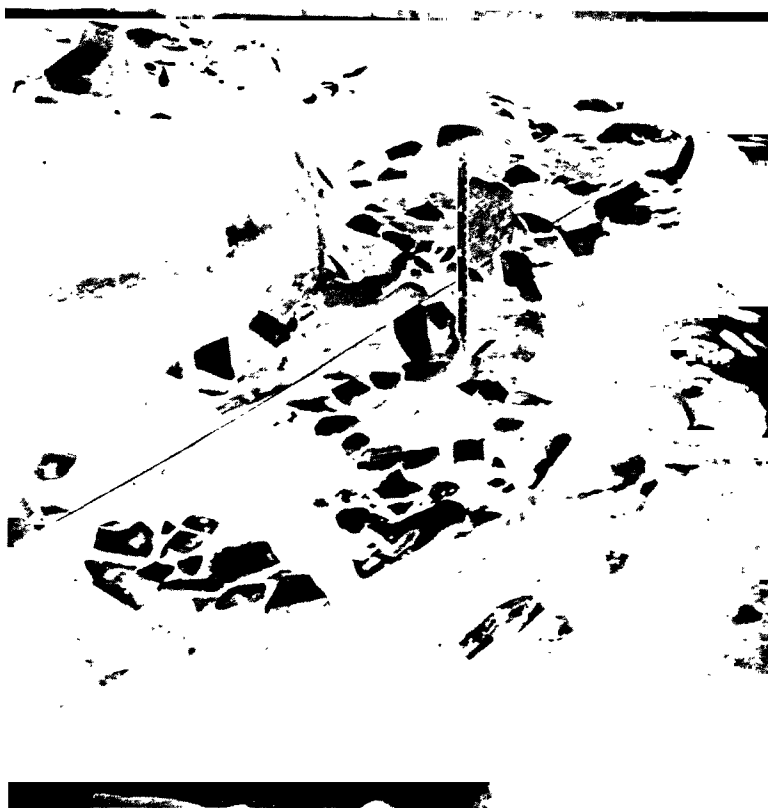
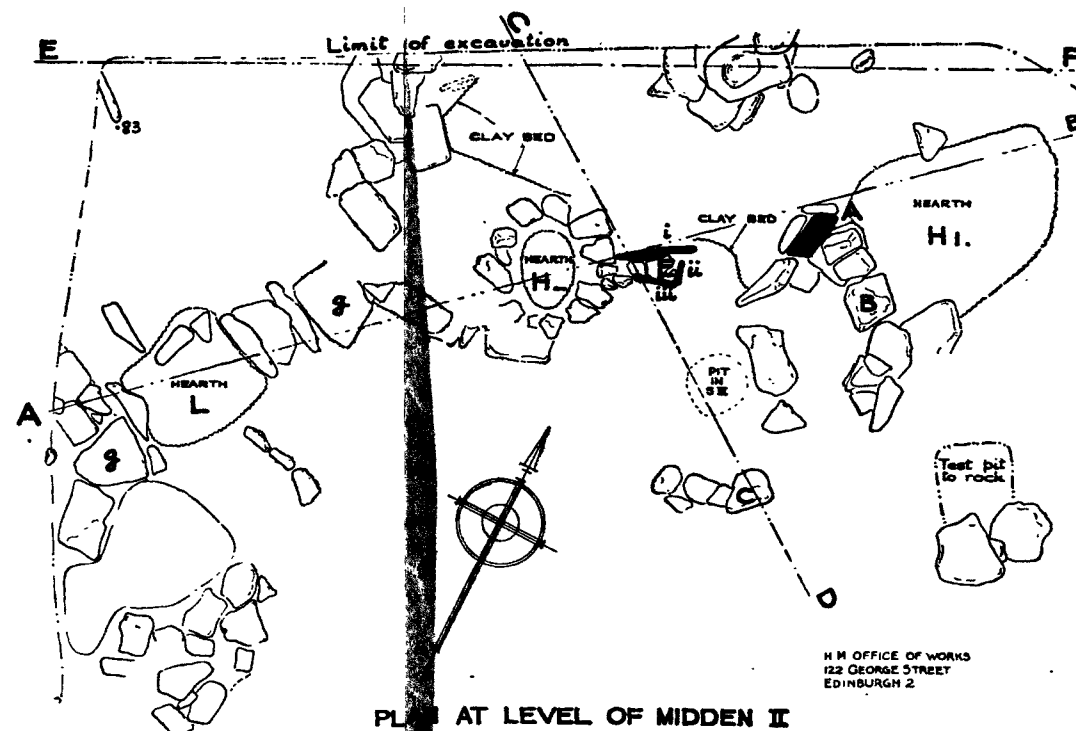
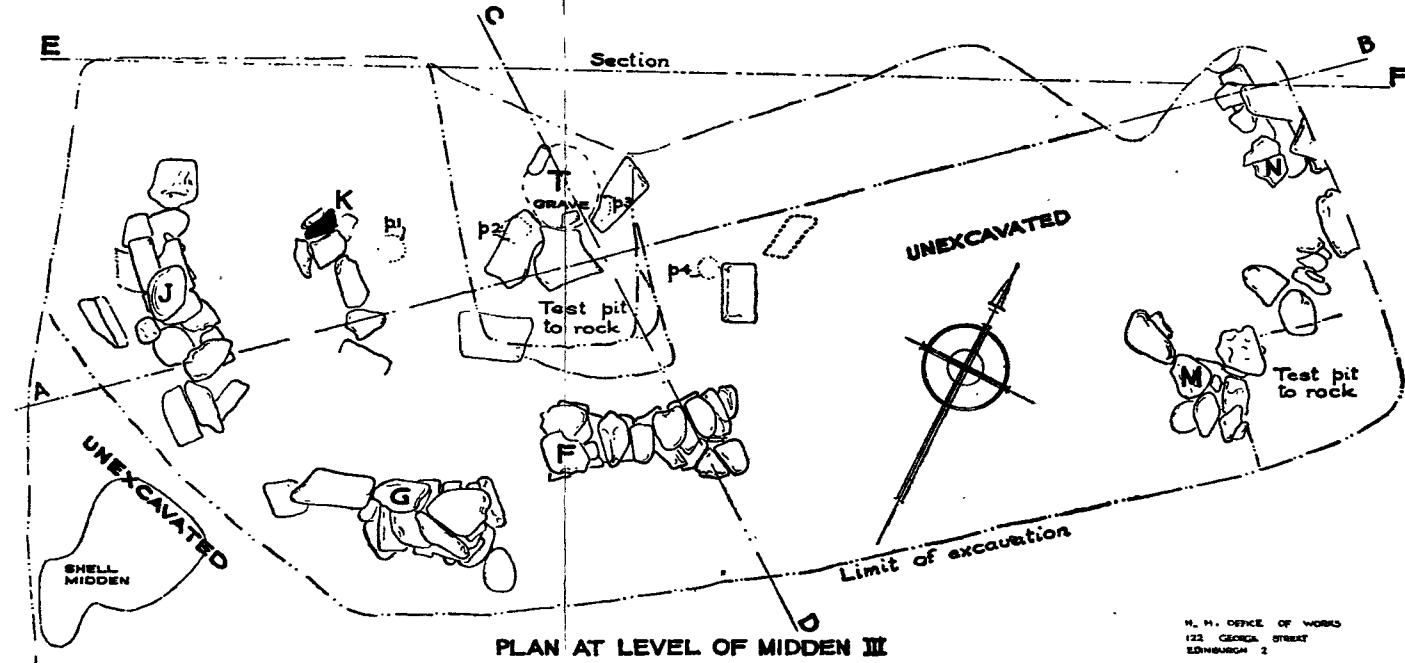
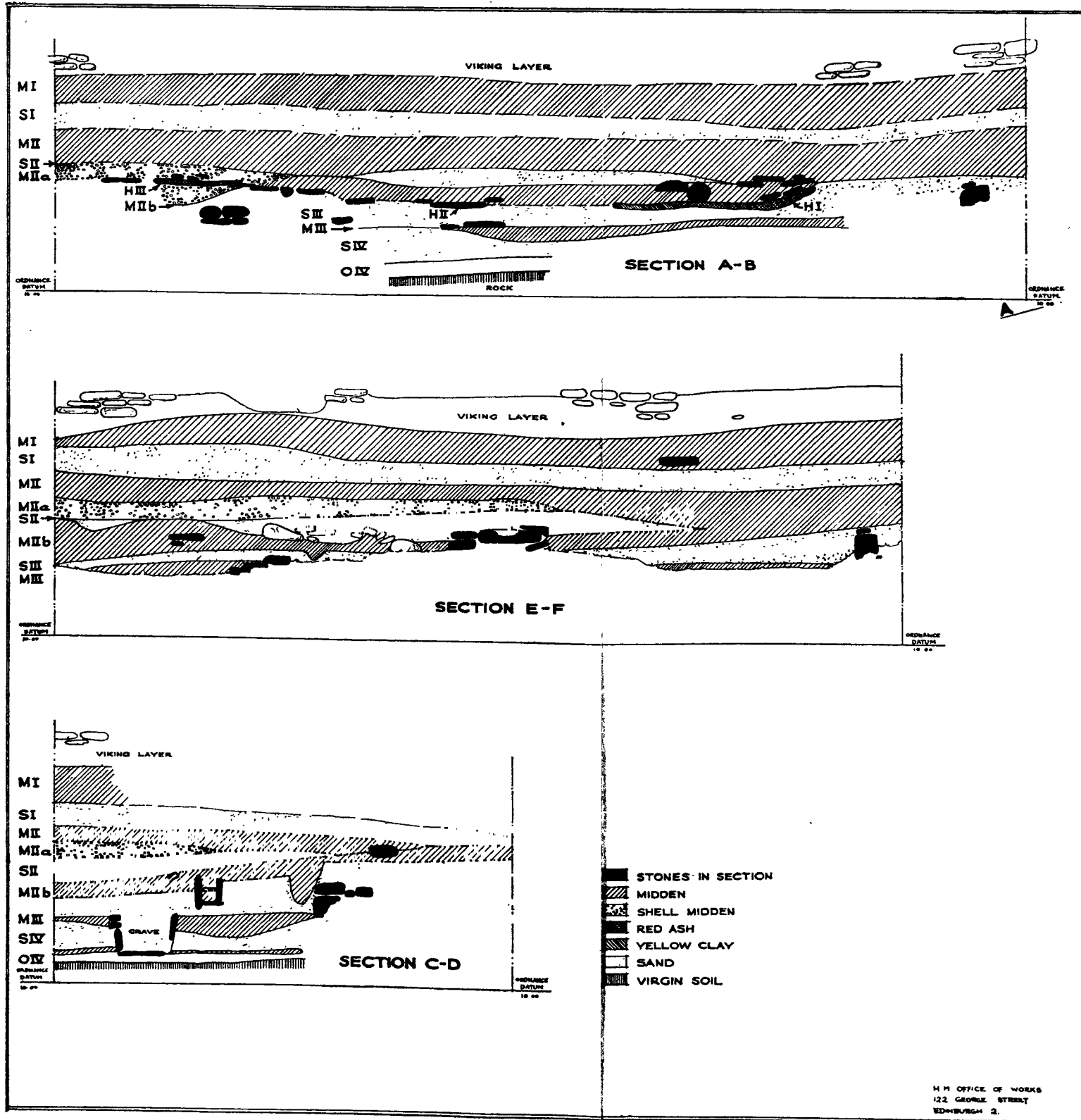


Fig. 1. General view of Constructions in Layer O II.



V. GORDON CHILDE.

PLATE XVII.



V. GORDON CHILDE.

PLATE XVIII.

[To face page 349.]

over an irregular space, about 45 feet by 25 feet, midden layers of dirty sand and a clean sand-blow, interpolated between them, had been removed until a chaos of stones and some apparent wall tops were exposed. Under the Inspector's direction this area was subsequently excavated by layers under my supervision. We thus discovered first some fragments of a building represented by a pillar stone, A, a segment of wall adjacent to it, B, a second segment, C, a large clay hearth, H1, north of AB and to the south a cist, E, and some paving, gLg (fig. 1). These rested on or were sunk in a well-defined but irregular "floor," O II, that sloped down westward from 15.5 to 13.6 feet above O.D. Under O II the tops of earlier walls were already protruding. So the more ruinous structures of O II were removed that the more perfect antecedent walls might be conserved. An earlier occupation level, O III, was thus laid bare. Finally in vacant spaces test pits were sunk from this level to virgin soil that lay about 11 feet above O.D.

Mr Richardson had also directed the sinking of a series of trial pits in squares 10/19, 18/19, and 18 B. Of these No. II in square 18 B disclosed good walling under sand at about 19 feet above O.D. Under the Inspector's direction this pit was accordingly extended. After removing some ruinous Viking foundations in consultation with the Inspector we here exposed an interesting strip of boundary wall, some 27 feet long, belonging to the Bronze Age settlement and connecting up on the south with other walls and associated occupation deposits, which could not be explored this season, and were accordingly covered over again.

STRATIFICATION IN THE NORTH-EAST CORNER.

Archæologically the most interesting of the year's results was the insight gained into the stratigraphy of the site and so into the sequence of its occupations. The profiles, exposed in the walls of the deep excavation in the north-east corner, and our own observations reveal the following layers (Plate XVIII): below mediæval and/or Viking foundations is a reddish stratum containing ashes and relics of Viking age. It passes over gradually into a bed of dirty black sandy material that I term M I, the base of which is best defined by some paving slabs exposed in the north-west wall of the cut (section EF: the slabs are visible in fig. 2). Below M I all round the section is a sand-blow, S I. This appears often only 6 to 12 inches thick, but is really deeper—16 inches in places; its upper layers have been stained with organic matter from M I save where horizontal slabs under the latter have prevented

percolation. The base of the sand-blow is marked by a band of ferruginous concretion that appears in the profile as a very undulating line. S I is the sand-blow deposited, according to Curle, "soon after the wall of Dwelling No. I had been erected." It rests conformably on another deposit of black material, M II, varying in thickness from nearly 4 feet on the south to barely 2 feet on the north wall of the excavation.

M II is divisible over most of the area into three parts. At its top the layer is formed mainly of dark stained sand. On the south-west this layer, 18 inches thick, covers a tougher bed, M IIa, full of shells. The shell midden is 18 inches deep on the south-west wall and eastward as far as wall F-J, but it continues as a thin band, 4 to 6 inches thick, eastward up to the middle of H1 and southward as far as C. In the central area M II is interrupted by a second sand-blow, S II, immediately below M IIa. The sand-bed attains its maximum thickness of 1 foot or more over Q and north of A, but it thins out to a barely perceptible streak and never reaches wall C on the south. M IIb, the basal portion of M II under S II and elsewhere, is tougher than the top layer and resembles a true occupation deposit. At its base is a layer of yellow clay on which stone A stands and which, baked hard and reddened by heat, forms the basis for H1. South of cist E its place is taken by the layer of slabs at *g*.

The clay, the slabs and the wall stumps B and C rest in their turn upon a bed of clean sand, S III, the top of which slopes up eastward from 13.5 to 16.25 feet above O.D. This sand covers and buries the wall stumps F, G, and J, and an occupation deposit, O III, at their bases. Against the walls and south of them O III is represented merely by a tenuous band of discoloration in the sand, which none the less contains sherds and implements and which lies nearly horizontal 13 feet above O.D. Farther north and west it is flush with the surface of a dense midden deposit M III attaining a depth of 9 inches and consisting of closely packed bones mixed with sherds and a few implements.

M III and O III rest on a bed of pure sand, S IV, but 15 to 18 inches down S IV is discoloured by a brownish band 3 to 4 inches thick. From this layer we recovered a few shells, including an oyster-shell, and some stones, broken, but probably by natural agencies. A passing occupation, O IV, buried by S IV, is therefore possible but not certainly established. About 8 inches below this ambiguous band the perfectly clean sand rests on sterile clay, bluish and greasy, which covers the rock-head between 10.85 and 12.15 feet above O.D.

CONSTRUCTIONS EXPOSED.

The area of our deep digging was selected because no buildings of the Viking or broch periods covered the earlier constructions. At the base of M I are a few slabs, possibly remains of pre-broch buildings. Even the structures corresponding to O II are very ruinous. The best



Fig. 2. Pillar A, and Slabs lying over H1.

preserved were buried by, and therefore anterior to, S II, and accordingly to M IIa.

A chaos of stones in the sand-blow S II undoubtedly marked the ruins of Bronze Age walls, but only the pillar-stone A, two courses of masonry at B with two connecting stones, and perhaps three stones at C, survive (fig. 2). B and C rest directly on sand at 15·6 feet above O.D., with a tough occupation deposit over it, which slopes down northward. Stone A, 2·5 feet high, is very neatly pinned up with wedge-stones, and rests at 14·2 feet O.D. on a thin layer of yellow clay. But on the south

side of the pillar the actual floor seems marked by a slate slab at 14·9 feet, upon which traces of peat ash were observed.

North-east of A-B the clay bed extends to form the basis of the hearth, H1—a red baked area about 6×4 feet square. Near its centre the peat ash is 5 inches deep, with its surface 14·3 feet above O.D., but the edges are formed of clay burned almost to pottery and folded up to form a rim on the north-west at 15·1 feet. No sort of kerb surrounded H1, but it was found covered with two layers of slabs, that looked like a pavement when first exposed (fig. 2). They may once have stood upright and formed sides to an oven or similar structure over and round H1, but in the thin clay and soft sand below no sockets for the slabs could survive. Beyond the raised rim of H1 the occupation layer under M II becomes tenuous and the whole deposit contracts to the north and east. To the south the clay extends as far as H2, and is continuous with the tough occupation layer at the base of B and C.

North of A the yellow substratum extends under the walls of our excavation. Resting upon slabs 6 inches above it, 4 feet north-west of A, stands a trough-quern formed from a block 2 feet long by $1\frac{1}{4}$ feet wide by 6 inches thick in which has been worked a completely closed oval depression 15 feet long by 11 feet wide by 4 inches deep. Two convex oval rubbers were found on the north-west side of H1 and a third on the south-eastern edge. South-west of A the box or cist, E, has been sunk into the floor defined by the occupation layer between A, B, and C (fig. 3). It is paved with a very thin "slate" slab that runs under the south side stone E III. The latter is not parallel to its stouter northern counterpart E I, but the clay luting at its base follows the line of its present position. The cist is 1 foot 1·5 inches deep, and contained some stones that may once have covered it.

West of E a ring of small stones, laid on the tough occupation floor, surrounded an area of thin red and black ash, H2 (fig. 1). To the north, under the wall of the excavation, begins an area where the yellow clay has been baked red as in H1, and which I accordingly term H3. South-west of H2 a series of flat slabs took the place of the yellow clay and suggests a pavement, though the slabs may have fallen. They seemed to lead up to another area of laid clay, L, which at its centre had been reddened and formed a hearth nearly 4 inches thick. In the base of M IIb between C and E a round depression had been sunk in the sand of S III to a depth of 12 inches at its centre. It contained only the usual midden material.

Though these fragmentary ruins do not suffice to define a dwelling such as Curle found farther west and nearer the shore, they at least

denote an occupation area. And the vague floor at the base of M II did yield a number of relics, which will be described below.

Under S III the wall stumps, J. G. and F, corresponding to O III, look like remnants of the boundary wall of a dwelling (fig. 4). They



Fig. 3. Cist in O II level and mouth of Pit T below it.

are only one course thick, faced on the north-west, and must have been built up against sand banked outside them (fig. 5). At the ends they are strengthened with piers. They stand on loose sand. At their foot was no hard floor, only dirty sand that was, however, full of sherds and bones. Within the area the walls should enclose, a number of slabs were found lying in the sand: as pottery was found under, not over, them they had presumably fallen. The tall pillar, K. 3·5 feet high, was in fact found thus lying prostrate, but its socket was so clear that

we ventured to set it up again (fig. 4). No hearth was found within the area bounded by FJ in so far as it was explored. (Though cist E was dismantled and then set up again, we left pillar A and H1 intact as memorials of the period denoted by O II, so that the space beneath them could not be explored.)



Fig. 4. Inner Faces of Walls in Layer O III looking south-west.

Instead of a hearth we found beneath the O III surface-level of 13 feet above O.D. a dense midden, M III, composed of closely packed fragments of bones, shells and sherds, filling a hollow in the underlying sand. The depression, beginning with a depth of 9 inches about 5 feet north-west of K, extends for 13 feet, contracting to 4.5 inches under H1; south-eastward it extended up to the north-east "end" of wall F2 and westward to about H3. The pottery from M III is identical with that from the O III level outside it, *e.g.* at the base of J.

A cylindrical pit, T, 2·2 to 2·5 feet in diameter, had been dug through M III and the underlying sand to a depth of 18 inches, *i.e.* to 11·45 feet above O.D. (*cf.* fig. 3). The uppermost 9 inches of the pit were filled with loose rather dirty sand in which lay parts of the occipital and left temporal bones of a human skull, three clubs—one very finely shaped, with a pecked handle—a Skaill knife and a flat elongated rubber. Lower

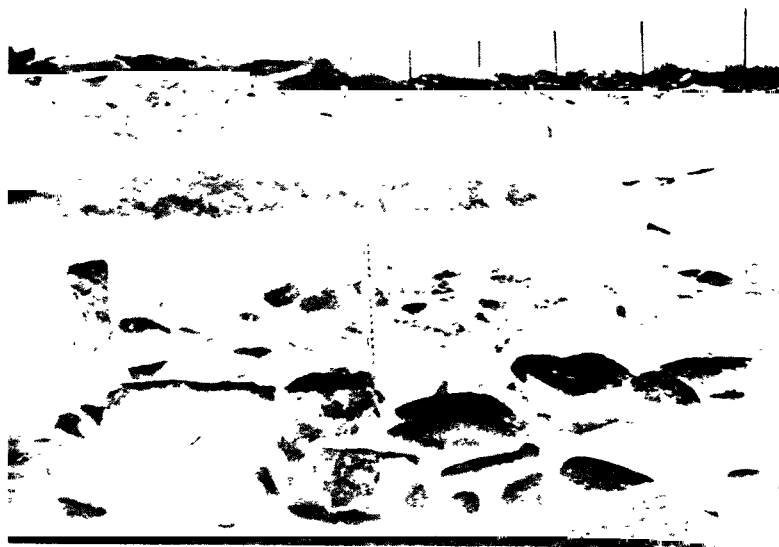


Fig. 5. Outer Face of Walls G and F from south.

down the sand-filling was dirtier and greasier and comprised small lumps of yellow clay, similar to that underlying M II. There were flat slate slabs, covering the sand, at the bottom of the pit, and against its south-west wall a stone on edge supporting two horizontal stones just up to the O III level. Two other tilted slabs seemed to have walled the pit to a depth of 10 inches below that same level. A slab lying horizontal, at the same level, has been broken along the edge to fit the mouth of the pit.

Pit T perhaps contained a funerary deposit and had been dug after the deposition of M III. Owing to the disturbance involved in sinking cist E into the O II floor, and the narrowness of S III in the critical region, I cannot say whether these deposits were absolutely intact precisely at the critical point immediately over T. The bits of yellow

clay in the pit might well have got there in digging through the clay bed under O II. In that case the pit need not be older than O II, though it certainly existed when S II was deposited.

After removing M III four circular discolorations, p^1 - p^4 , were observed in the underlying sand. On cleaning out they were found to run down to 11·8 feet above O.D., or 1·2 feet below the O III surface. One, p^4 , contained four feet of a cow. It is more likely that these cavities represent places where baskets or other perishable containers had stood than that they were post-holes. In addition to walls F-J, a pier, M, and a row of stones, N, at the north end of the excavation belong to the O III phase. Plenty of typical sherds were found at their bases.

O III and M III yielded plentiful relics of occupation. Among the shells, mussels, rare in higher levels, were especially noted. Sherds were very numerous, and will be described below. No structures were found beneath these deposits, which must rank as the earliest occupation, at least in this corner of the site.

NOTES ON THE RELICS.

As in previous excavations, *stone tools* were found in embarrassingly large numbers. Quartz tools, mainly scrapers, were collected by the hundred in M III as much as in M II.

Rough flaked stone or "slate" implements, whatever their real functions, can be classified typologically on precisely the same principles as flint tools, as I hope to show elsewhere. Here I content myself with giving the results from an application of the major division into core and flake implements: 41 tools from M II and only 4 from M III are cores; 30 from M II and 3 from M III, flakes.

Tools shaped by pecking come from M II only, save for the specimens from the pit, T, the attribution of which is uncertain. The perfect club from this deposit is 20 cm. long over all. The flattened pear-shaped body, which is smooth, has a maximum width of 8·8 cm., 4 cm. from its end, but contracts to 7·2 cm. at its butt. From this projects the rounded handle, pecked all over, 8 cm. long and 5·8 cm. wide at its base.

Skaill knives, formed by splitting pebbles, just as at Skara Brae in Orkney, had not previously been reported from Jarlshof, but were found abundantly this year, but exclusively in M III.

Polishing seems to have been resorted to for sharpening the edges of two slate "knives" (one from M III) and a thin slate "chisel" from M II. In M III under one of the slabs of pavement, *g*, lay a polished implement of fine-grained stone (fig. 6, 3), probably a "Picts' knife,"

such as are so common in Shetland, rather than an axe. It is triangular in plan and 1.2 cm. thick at its stoutest. The base of the triangle has been ground to a bevelled edge but the longest side has been chipped to form a scraper. An end-scraper formed by chipping a polished pebble was found in M II beneath the wall stumps B and C (fig. 6. 2).

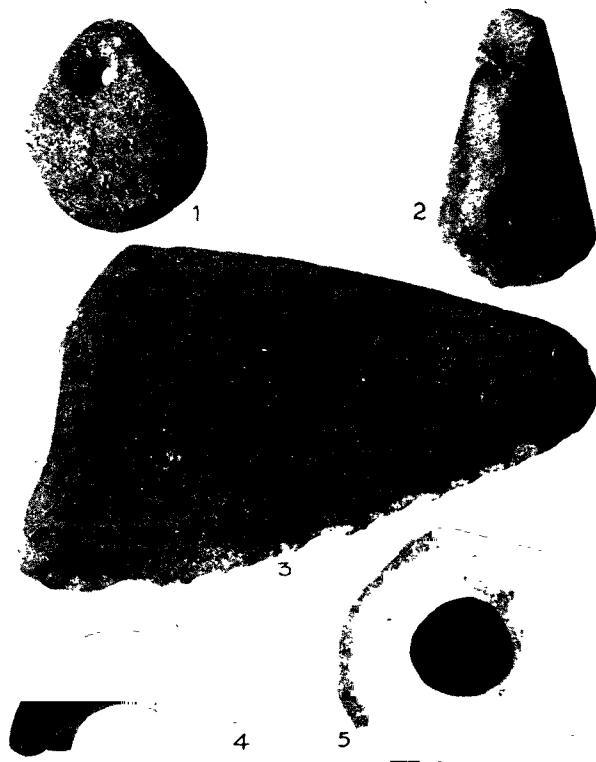


Fig. 6. Stone Artifacts.

A faceted sandstone polisher, 18 cm. long and 11×8 cm. thick at its centre, was found at the base of M II.

Three grain-rubbers from M II are subrectangular (23.5×15.7 cm.) and convex on both faces to fit a trough-quern; a fourth is more elongated. The rubber from pit T was almost circular in plan.

Bone Implements.—Piercing tools can be divided into three groups and are distributed as follows: (i) splinters polished to a point—7 from M II, 3 from M III (fig. 7. 3); (ii) marrow-bones of birds and small

mammals split longitudinally from the articulation—0 from M II, 6 from M III; (iii) marrow-bones split obliquely near one end of the shaft—1 from M II, 8 from M III.

Two-pronged implements (fig. 7, 4, 5) are confined to M III and represented by four specimens; they are generally made on marrow-bones.

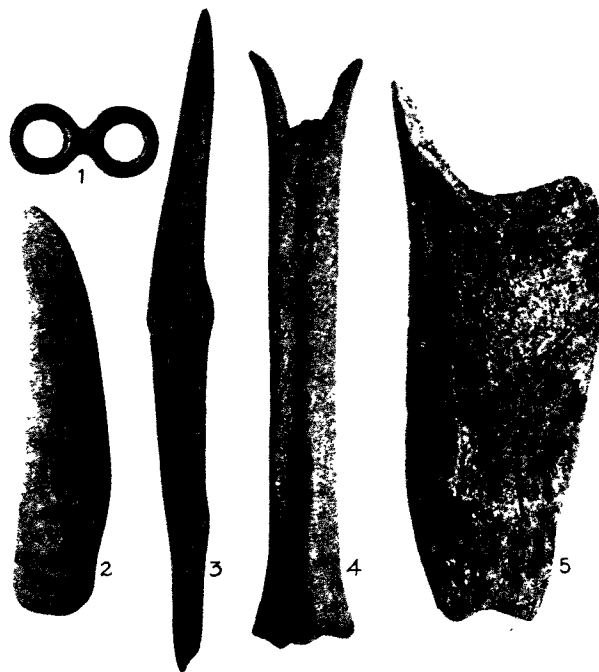


Fig. 7. Bone Artifacts.

Three shovels made from bovine shoulder-blades were found, 1 from M II and 2 from M III.

Oval implements worn along the edges are a novel type at Jarlshof, peculiar to M III. Fig. 8 is made from an ox's shoulder-blade with the crest rubbed down: fig. 9 from a slice of red-deer antler. With these were associated flake implements of slate of the same oval plan.

Fragments of five bowl-shaped steatite vessels were found in M II (fig. 10, 3), none in M III.

Pottery was rare in M II. The fragments all belong to thick vessels without any ornamentation. One rim is bevelled internally (fig. 10, 1),

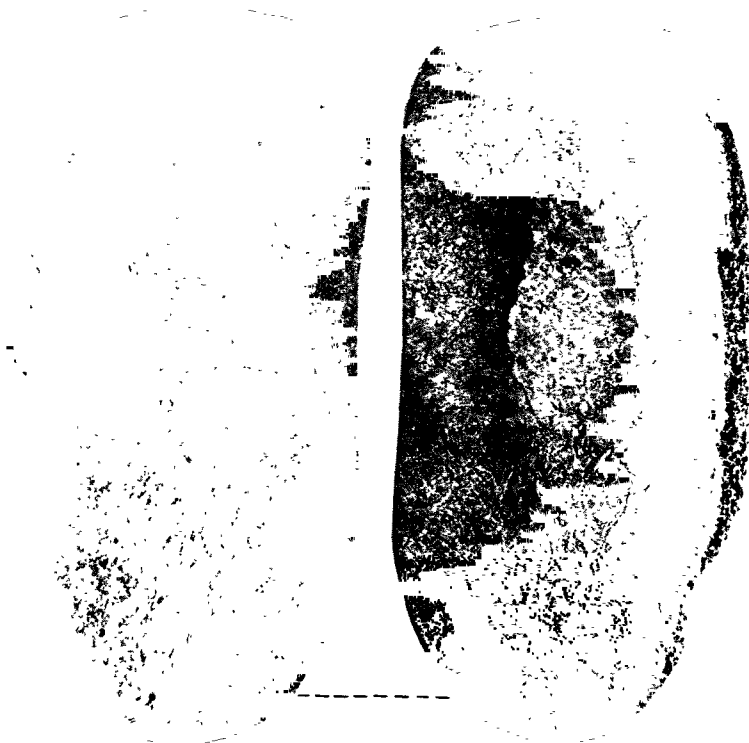


Fig. 8. Oval Implement of Bone from M III.

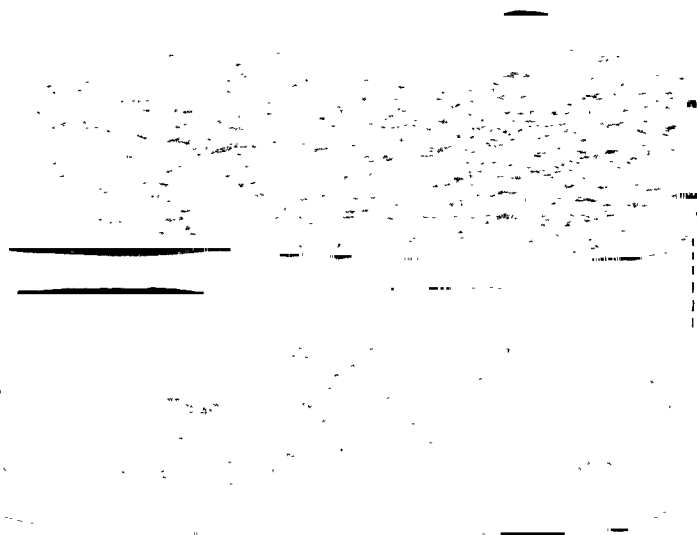


Fig. 9. Subrectangular Implement of Antler from M III.

another shows an external groove below the lip, recalling the stone vessel of fig. 10. 3. The pottery from M III is very abundant. The ware has a soapy feel and exhibits conspicuous remains of grass temper (fig. 11, 1). The surface is generally smooth but not burnished. The ware was so soft that the fragments recovered were too distorted to permit of the reconstruction of any complete forms. The rims are simply rounded; no flat bases were observed, so that the pots may have been round-bottomed. Several sherds have been perforated for mending (fig. 11, 4). Some sherds are decorated with coarse punctuations, but are too small for any design to be recognised (fig. 11, 2, 3). This ware is not paralleled in earlier finds from Jarlshof and indeed seems

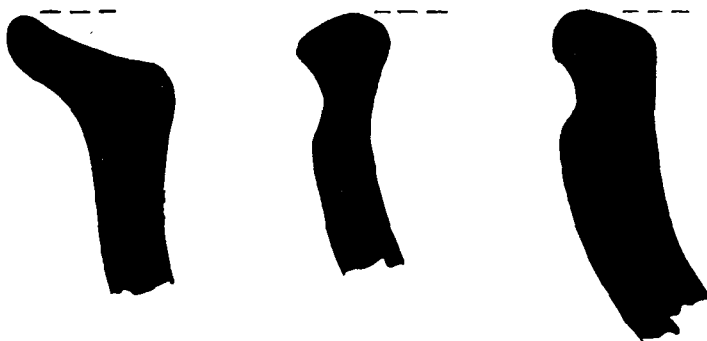


Fig. 10. Rims of Pots and Steatite Vessel from M II (natural size).

to be a new variety to Scottish archæology. The use of grass temper curiously anticipates the Viking practice, but our soft fabrics, so different from the hard ware of the Norsemen, were all found securely sealed under undisturbed prehistoric middens and sand-blows.

Three slate rings were found in M II (fig. 6, 4, 5). H6 is broken: it was .6 cm. thick and 1.4 cm. wide, the aperture exceeding 2.5 cm. H 81 and 95 were unfinished: the former has an over-all diameter of 6.2 to 6.8 cm. and an aperture of 1.2 cm., the second an over-all diameter of 4.8 to 6 cm. and an aperture of 2 cm. Several unperforated discs of the same order of magnitude found in M II may represent a preparatory stage in the manufacture of such rings.

The most remarkable object found in the prehistoric levels during 1937 is the bone plaque shown in fig. 12. It lay at the point marked 83 on the plan at the base of the thin sand layer intercalated between M IIa and M IIb. One side is decorated with finely engraved lines in a style reminiscent of the schist plaque-idols and croziers of the Portuguese Copper Age and of the decoration on Early Bronze Age daggers and

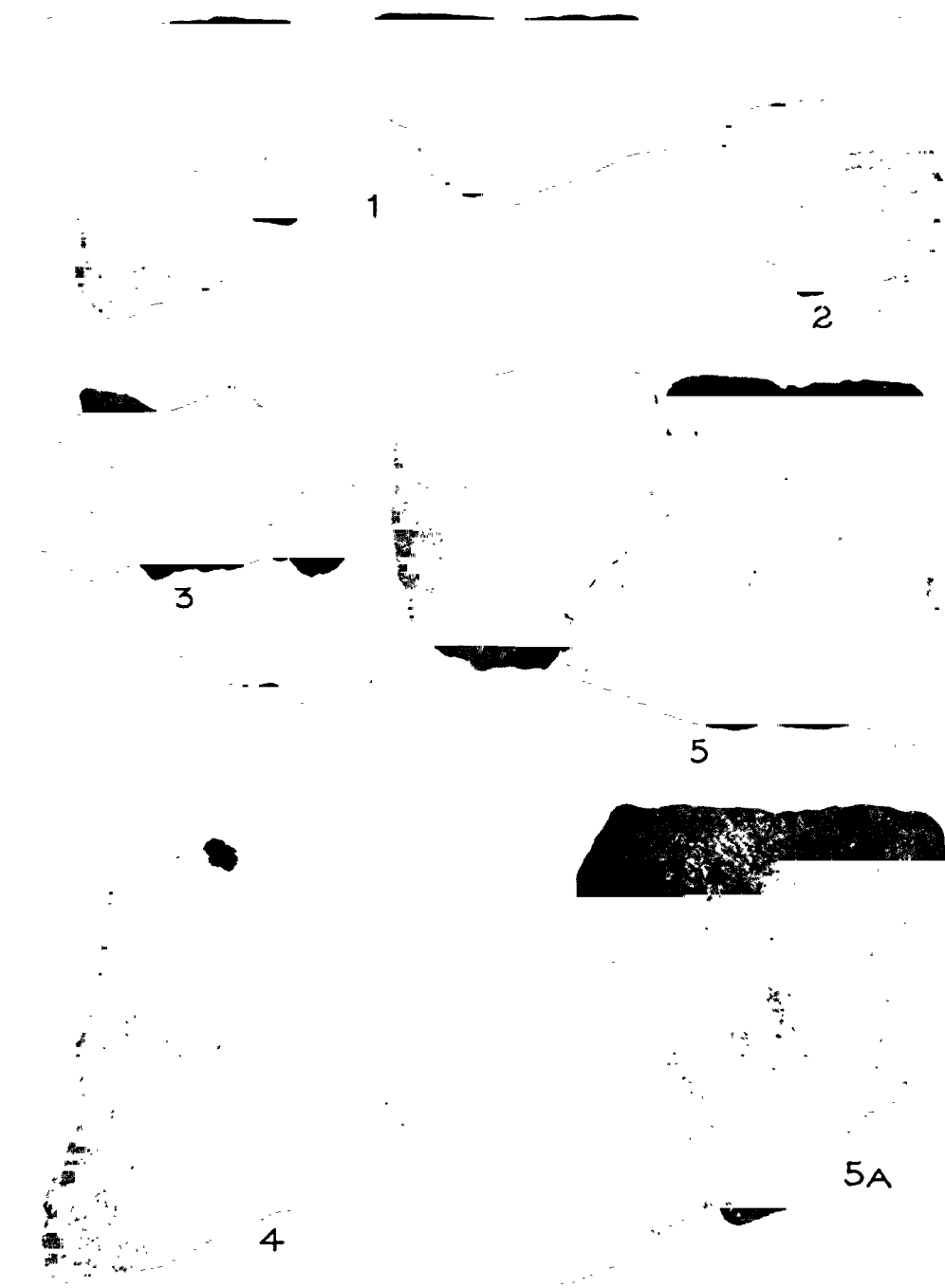


Fig. 11. Pot-sherds from M III (natural size).

ornaments. Mr Richardson suggests that it was the plate of a dagger-sheath.

The double ring of bone (shown in fig. 7, 1), apparently a copy of a

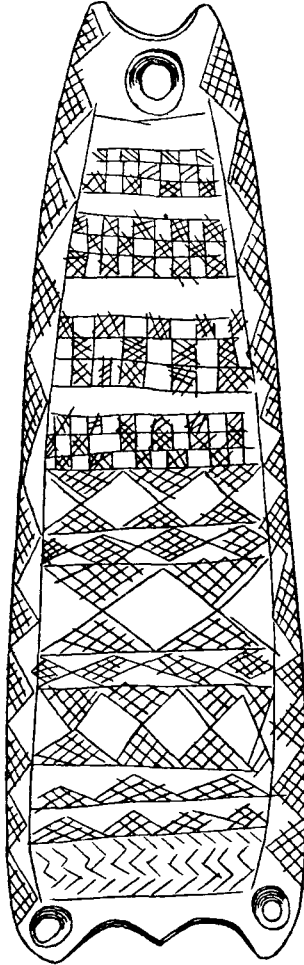


Fig. 12. Engraved Bone Plaque (natural size).

metal mount, was discovered before I arrived, probably in M II. At the same time three hollow button caps of thin bronze, much corroded, turned up apparently in S III just over the stones at N.

It is not easy to fit the cultures revealed on the floors of these very ruinous dwellings into any one of the stages outlined by Dr Curle. On

purely stratigraphical grounds the relics from M II should be comparable in antiquity to those from Dwelling No. II and belong to phase I as defined in *Proceedings*, vol. lxx, p. 249. But the discovery of the three bronze buttons before my arrival might be taken as a warning not to apply thereto the term "pre-metallic." The culture of M III, characterised by novel pottery and bone implements, must on stratigraphical grounds be regarded as still earlier, indeed the oldest culture yet recognised at the site. Its archaic character is quite in harmony with such a view.

A BRONZE-GILT HARNESS MOUNTING FROM JARLSHOF.

By A. J. H. EDWARDS, F.S.A.Scot., DIRECTOR OF THE MUSEUM.

The relics of the Viking period discovered by His Majesty's Office of Works during recent campaigns will be described, together with the constructions exposed, by the Inspector of Ancient Monuments when



Fig. 1. Bronze-gilt Harness Mounting from Jarlshof.

further progress has been made. One object discovered this year, a mounting of bronze-gilt (fig. 1), is, however, of such intrinsic interest as to merit immediate publication and Mr Richardson has asked me to describe it here.

The object was found in pit 2, square 18, in the course of tracing out the boundary wall of the prehistoric settlement, mentioned in the

previous paper. This wall, it will be recalled, was crossed by the wall of a Viking house, the floor of which over the line of wall lay at 21.2 feet above O.D. Below the floor was a bed of discoloured sand containing bones and shells extending down to the level of the wall top, and it was in this layer at 19.5 feet above O.D., $6\frac{1}{4}$ feet north-west of the prehistoric wall, that the relic was found. As already mentioned, the object is made of bronze which has been gilded, although in the process of time the gilding has almost disappeared and the metallic bronze reduced to an advanced stage of decay.

A description of the object is unnecessary as the drawing (fig. 2) shows the detail of the ornamentation, which consists of a combination

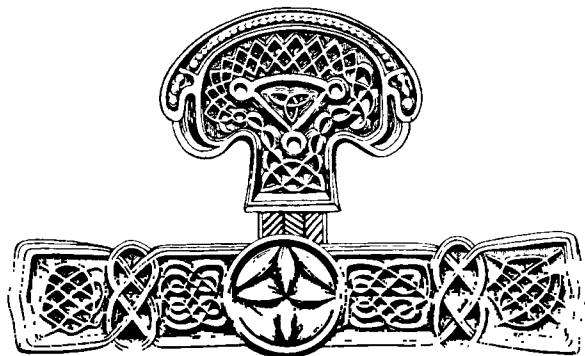


Fig. 2. Bronze-gilt Harness Mounting from Jarlshof.

of the so-called chip-carving and interlacing work, together with an enrichment of geometrical patterns, such as the sunk panel in the centre of the bar, and the pellets and globules on the outer edge of the upper portion of the object. The back of the bar is slightly concave and at either end are two metal loops with the remains of a pin in each. In the centre of the bar is a small stud. The loops have probably been passed through holes in a leather strap, the pins securing them in position, while the central stud would act as a button and prevent any sagging of the strap in the centre.

These mountings are now well known and their date and use have been discussed by Johs. Bøe of the Bergens Museum in a paper by him on "Celtic Objects found in Norway," published in the *Bergens Museum's Aarbok*, 1924-25, Hist.-Antikv. række nr. 4, pp. 20-34.

Although only one mounting was found at Jarlshof, three sets of similar objects have been recorded, one from Navan in Ireland and two from Rogaland in Norway, one of the two latter coming from the

farm of Gausel in the parish of Hetland and the other from the farm of Soma in the parish of Høyland. At Gausel the find was identified as part of the burial furniture of a woman's grave of the early ninth century, as in addition to the set of mountings which lay directly on and close to a horse's skull there was also found a number of personal relics and objects for domestic use. At Soma one of the objects associated with the discovery was a horse's bit. The Navan find was made in 1848 and a number of objects were found together, which are described in Sir William Wilde's *Catalogue of Bronze Antiquities*, 1861, p. 611, as chariot furniture. These included a bronze disc, probably an attachment for a trace, a bronze bridle-bit; iron rings plated with bronze; the skull of a horse, and seven ornamented gilt plaques. A glance at a recent illustration made by Armstrong in *The Antiquaries' Journal*, 1922, vol. ii. Plate II, and the illustrations in *Norske Oldsager*, Nos. 618-627, by Rygh, and in the *Bergens Aarbok*, pp. 32 and 33, by Bøe will be sufficient to identify the Jarlshof mounting as one of a similar series of objects. The resemblance between the objects is remarkable, especially in their form, although the details of ornamentation are slightly different. In two of the finds we have the significant appearance of the skull of a horse, and in each example a portion of the associated relics consisted of horse furniture. It is true that no other object was found with the plaque from Jarlshof which would assist in its identification as part of the trappings of a horse, but by the first half of the ninth century A.D. it was the fashion for Viking women to wear souvenirs presented to them by the warriors on their return journey from the West, so we may have in this solitary specimen from Jarlshof an object which was intended for use as an ornament for personal decoration.

A bronze mount ¹ from the West of Scotland similar in form and decoration to one of those in each of the sets of mountings from Ireland and Norway has indubitably been used as a brooch. On the back are the remains of a hinge for a pin and the protective catch for its point.

¹ *Proceedings*, vol. lxi. p. 22. fig. 5.

II.

GLASS ARMLETS IN BRITAIN.

BY H. E. KILBRIDE-JONES.

(Read 11th April.)

While discoveries of glass armlets in Scotland are widely known, the extent of the local manufacture of such ornaments is by no means fully appreciated, despite the existence of the published accounts of the Traprain Law excavations. Further, ideas of their distribution and of the period covered by the various forms are somewhat vague: inadequacy of the data from sites other than Traprain Law has been responsible for whatever confusion still exists. Anyone scanning some of these published reports from the pens of the older antiquaries must be discouraged by the scant reference which has been made to the discovery of glass armlets, and particularly to their find-spots, if indeed reference has been made at all: it would almost seem as though to them glass armlets were of no account.

In the present paper the author has brought together as many as possible, if not all, of the known specimens of glass armlets found in Britain; he also ventures to put on record his opinions as to the periods during which the various forms were made, and to indicate the lessons to be learnt from the distribution of the specimens examined.

Not the least interesting feature of the glass armlet is to be found in its infinite variety, not only of form, but also of colour, and of combinations of colours. There is also a marked variation in diameter and in weight. There is, for instance, the heavy, plano-convex (almost half-hooped) type, which is, perhaps, the most striking form of all: at the other extreme there is a small slender form, with an internal diameter of only $1\frac{5}{8}$ inch, formerly hailed as an armlet,¹ but which, in reality, is a pendant (as will be explained later). Faced with so many contrasting forms, it seemed desirable to divide up our large collection of glass armlets into various type-series. It has been found possible to distinguish three main types in the varied and somewhat heterogeneous collection at our disposal. This division into three main types was arrived at by analysing form, technique of manufacture, and colours utilised. Thus, the heavy armlets illustrated in figs. 1 and 2, with

¹ *Arch. Æl.*, vol. xxv. p. 286.

their bands of enamel covering cores of uncoloured translucent glass, could hardly be confused with any of the succeeding armlets: they are therefore said to belong to a single type—Type 1. The armlets illustrated in fig. 3 are different from the foregoing: they have cord mouldings applied horizontally to glass cores which have no applied bands of enamel, but the glass of which is itself either coloured or left uncoloured. These armlets also present a contrast to the succeeding examples, so that they may be claimed to belong to a second type—Type 2. With the remaining armlets the task is not so easy: there is such a wide variation in cross-section and in colour, or in combinations of colours, that at first it might seem as if many types were represented here: actually, however, a little careful study will reveal that in reality they belong to a single, third type—Type 3—because it will be seen that all have the same form in cross-section, so that variation is really confined to colour, or to combinations of colours. The choice of colour, however, was by no means a haphazard one: a single colour, or a single combination of colours, might be faithfully reproduced half a dozen, or indeed a hundred times, and these facts enable us to isolate at least 10 sub-types amongst armlets which, in so far as form is concerned, belong to a single type. These sub-types have been labelled Type 3, A–J.

Type 1.—The heavy, plano-convex type of glass armlet is undoubtedly the earliest form, as will be demonstrated later on. So far as is known there are 19 fragments of this heavy type: 13 from Traprain Law, 1 from Maxton, Roxburghshire, 1 from the Roman fort at Camelon, Stirlingshire, 1 from Monquhitter, Aberdeen, 2 from the Culbin Sands, and 1 from Dun Beag, Struan, Skye. Generally speaking, all these fragments have a core of translucent glass which has been coated with obliquely set bands of enamel in yellow, in dark crimson, and in dark blue. In fig. 1, Nos. 1 and 3 (from Traprain Law) have been coated with bands of chrome yellow and dark crimson enamel: in the case of fig. 1, No. 2 (from Traprain Law), there are spots of dark crimson enamel set in the band of yellow enamel, as well as a narrow band of dark crimson. In fig. 1, No. 4 (from Traprain Law), a spot of yellow enamel has been set in the middle of the band of crimson enamel set between bands of chrome yellow. In fig. 1, No. 5 (from Maxton, Roxburghshire), and in No. 6 (from Traprain Law), the bands of enamel are of chrome yellow and dark blue; and in both cases spots of yellow occur in the middle of the blue band. Fig. 1, No. 7 (from Dun Beag, Struan, Skye), is unique: the core of translucent glass has been coated

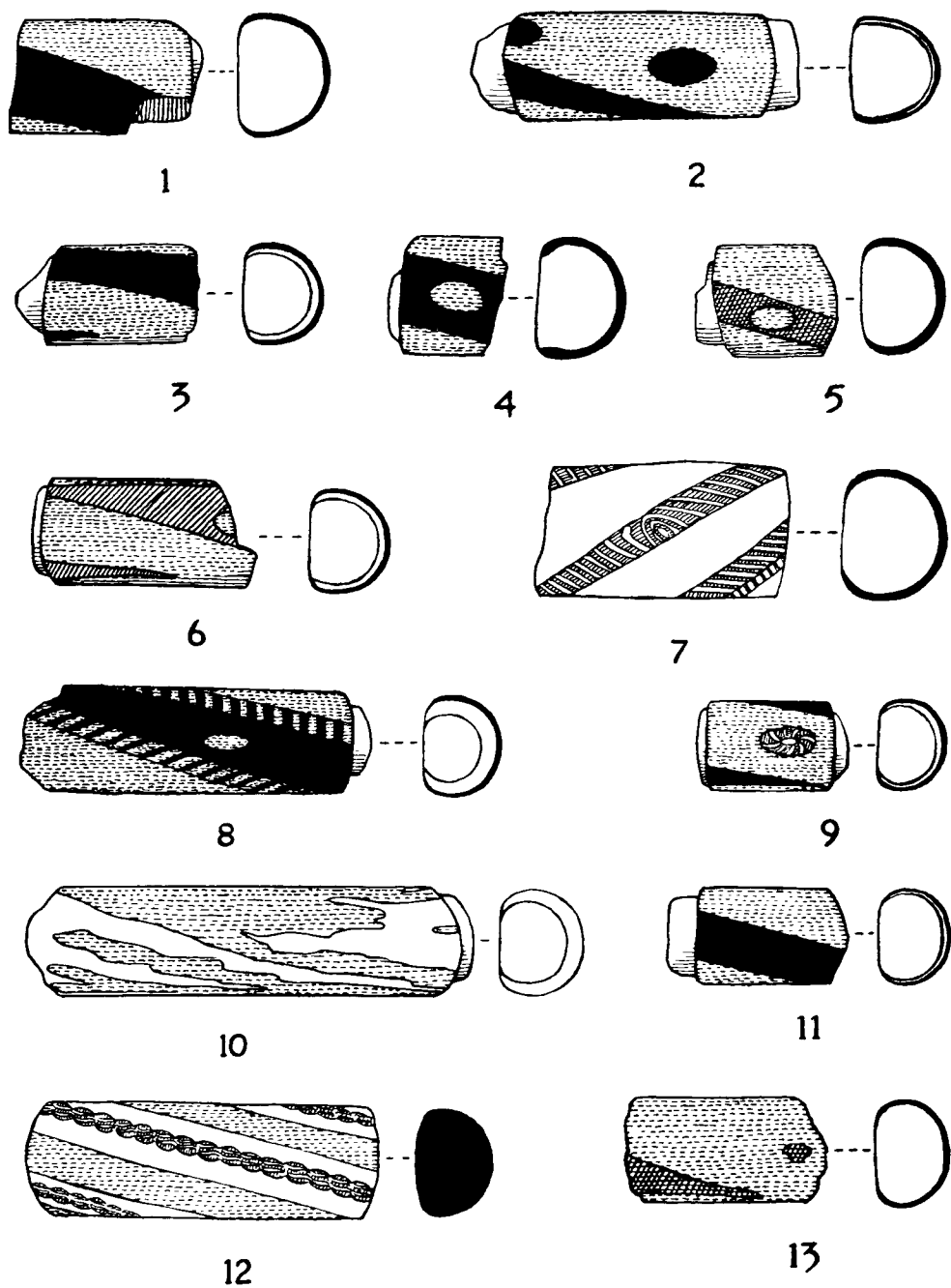


Fig. 1. Glass Armlets of Type 1. Nos. 1, 2, 3, 4, 6, 8, 9, 10, 13, Traprain Law, E. Lothian; No. 5, Maxton, Roxburghshire; No. 7, Dùn Beag, Struan, Skye; No. 11, Camelon, Stirlingshire; No. 12, Monquhitter, Aberdeenshire. (1).

with bands of white enamel separated by cord mouldings of white and honey colour which have subsequently been ground down to make a smoothly rounded surface: the mouldings do not protrude. A somewhat similar fragment, though in different colours, comes from Traprain Law (fig. 1, No. 8), a fragment which has bands of chrome yellow and dark crimson enamel. In the middle of the band of dark crimson there is a spot of yellow enamel, and on either side of the same band there is

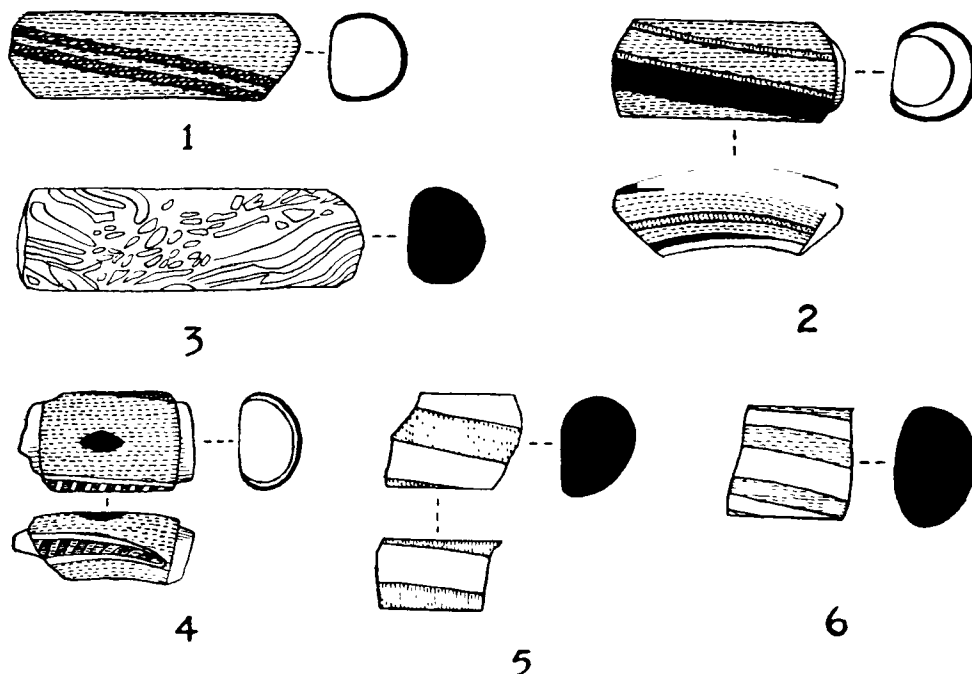


Fig. 2. Glass Armlets of Type 1. Nos. 1, 2, 3, 4, Traprain Law; Nos. 5, 6, Culbin Sands, Morayshire. ({}).

a cord moulding of yellow and crimson which, as in the case of the Dun Beag armlet, has been ground down to make a smoothly rounded surface. Fig. 1, No. 9 (from Traprain Law), has a band of chrome yellow bordered on either side by wedge-shaped bands of dark crimson enamel. In the centre of the yellow band there is set an oval formed of a cord pattern of blue and white surrounding a yellow centre. A somewhat similar fragment (also from Traprain Law) is shown in fig. 2, No. 4. Here, however, a spot of crimson enamel takes the place of the oval formed of a cord pattern (as above), whilst the places of the wedge-shaped bands of crimson (of fig. 1, No. 9) are here taken by a

cord pattern, the cord being of yellow and blue, and ground down to make a smoothly rounded surface. One other specimen (fig. 1, No. 13, from Traprain Law) has a wedge-shaped band, this time in blue enamel: the remaining enamelled surface is in yellow, and there is a small spot of blue enamel. Fig. 1, No. 11 (from Camelon, Stirlingshire), has bands of dark crimson and chrome yellow enamel. Fig. 2, No. 1 (from Traprain Law), has been coated with chrome yellow enamel, and is traversed obliquely by two parallel lines of dark blue separated by a yellow line. In fig. 2, No. 2 (also from Traprain Law), the translucent glass core is enamelled in bands of chrome yellow, dark crimson, and green—the green being introduced in the form of thin stripes.

Nos. 10 and 12 of fig. 1, and Nos. 3, 5, and 6 of fig. 2, exhibit slight variations in technique of manufacture, although they are of precisely the same type. Fig. 1, No. 10 (from Traprain Law), has a core of translucent, yellowish-green glass which has been enamelled with chrome yellow, not in bands, but in a purposely haphazard fashion, leaving parts of the core uncovered. In No. 12 of fig. 1 (from Monquhitter, Aberdeen¹) we have spaced, obliquely set bands of chrome yellow enamel, leaving visible the yellowish-green translucent core. Set directly into this core, however, are cord mouldings of white and yellow, ground down subsequently to make a smoothly rounded surface—the mouldings do not protrude. The same technique in manufacture has been followed in the case of the two examples from the Culbin Sands (fig. 2, Nos. 5 and 6), but there are no cord mouldings: in the case of No. 5 the bands are of sage green, and in the case of No. 6 of golden yellow, whilst in both cases the cores are of yellowish-green translucent glass. A very unusual, and indeed unique, kind of armlet is the example of *schmelze* glass of a purplish tint, from Traprain Law (fig. 2, No. 3).

It will be appreciated that these armlets are remarkably uniform in type—with the exception of the two specimens from the Culbin Sands, which not only differ in the matter of the colours employed, but which, in view of their irregular shape, seem to be the work of an artificer not well used to turning out this kind of object. Almost certainly they are local productions.

In regard to fig. 1, Nos. 1, 2, 3, 4, 5, 6, 8, 9, 10, and 11, and fig. 2, Nos. 2 and 4, it will be observed that, in each specimen, either one or both ends have been cut, or ground down so as to produce a neck. Dr A. O. Curle has very ably suggested that the reason for such treatment would be for the purpose of applying a metal collar or mount in order to join together two segments:² he further suggests that this

¹ *Proc. Soc. Ant. Scot.*, vol. lxvi, p. 295.

² *Ibid.*, vol. l, p. 105.

idea may have evolved after the armlets got broken, in order to prolong their period of usefulness. Some of the segments so treated are small, as, for instance, fig. 1, No. 9: and the fact that such treatment was resorted to presupposes a particularly long life for a fragile article, and it may be that the segments which we now possess were those which fell out of their mounts and got lost. It is as well that we should bear these points in mind when studying the contexts in which the specimens from Traprain Law were found. Of the 13 specimens from Traprain Law, 5 were found in the bottom level, 7 in the third level, and 1 in the second level, as the following table will show:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
		No.	No.	No.
Fig. 1	1
	2	..
	3	..
	4	..
	6
	..	8	..	9
	9
	10	..
Fig. 2	13	..
	1	..
	2	3
	4
Total Armlets	1	7	5

The other relics (and especially the pottery) from Traprain Law show that the bottom level is a late first- and early second-century level, whilst the third level is a second-century one.¹ It thus becomes obvious that armlets of this type were being discarded or lost as early as the latter half of the first century A.D.: the second-century examples might well have been survivals from the first century. This view gains support from the fact that the type is practically unrepresented on Roman sites—a somewhat significant fact when it is remembered that the type is

¹ Lack of space forbids a full discussion in regard to the dating of the various levels at Traprain Law, but the periods assigned to these same levels are based on the published reports of the excavations in *Proc. Soc. Ant. Scot.*, vols. xlix., l., and liv.—lviii.

fairly widespread:¹ as we have seen, these armlets penetrated as far north as the Culbin Sands, as far west as Skye, but no farther south than Maxton, Roxburghshire. Type 1 is unknown in England—a matter of some importance. And only a single fragment has been found on a Roman site—at Camelon—another significant fact. But, as Sir George Macdonald has proved,² at Camelon the abundance of early pottery picked up in the immediate neighbourhood of the fort shows that there was a prolonged occupation of the site during the Agricolaan epoch, and thus the discovery of this single fragment of armlet of Type 1 on a Roman site is still consistent with the view which we wish to propound, namely, that the actual manufacture of the heavy, plano-convex type of glass armlet was entirely confined to the latter half of the first century A.D. That being so, perhaps we have here the explanation of the failure of the armlets of Type 1 to penetrate southwards: the Roman advance into north Britain probably rendered trade in that direction difficult, if not impossible. On the other hand, one of the northern examples (that from Monquhitter) was found in a cairn along with Roman relics,³ which, although apparently undatable,⁴ were nevertheless acquired at a time when it was possible to export such objects to the north of Scotland.⁵ It seems, therefore, that armlets of Type 1 were made over a short period during the latter half of the first century A.D., and that manufacture of the type had ceased before the inhabitants of Traprain Law gave their allegiance to the new military power, and before the hill-top town became a flourishing centre of Romano-British culture.

Type 2.—An equally ornate, though slightly less heavy, type of glass armlet succeeded the armlets of Type 1: and that armlets of Type 2 quickly succeeded those of Type 1 is almost proved by No. 1 of fig. 3 having a ground-down neck for the reception of the usual metal mount, and by No. 5 of fig. 3 being, in section, very much akin to the heavier type which we have just studied. Fig. 3, No. 1 (from Traprain Law), is a fragment of a very beautiful armlet of cobalt blue translucent glass, bearing along each side and at the apex cord mouldings of blue and white. Alternating between the mouldings are yellow spots. Fig. 3,

¹ Type 1, as we shall presently discover, has a wider distribution than any other type of glass armlet.

² *Jour. Roman Studies*, vol. ix. p. 130.

³ *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 295.

⁴ It is worth noting that one of the objects was of schmelze glass, and might well have been made during the same period as the fragment of armlet of similar glass from Traprain Law.

⁵ This must have occurred during the first century, since none of the later types of armlet (some indubitably of second-century date) ever penetrated north of the Forth.

No. 2, which is a surface find from Newstead, is of similar form and colour, but the three cord mouldings are grouped together at the apex.

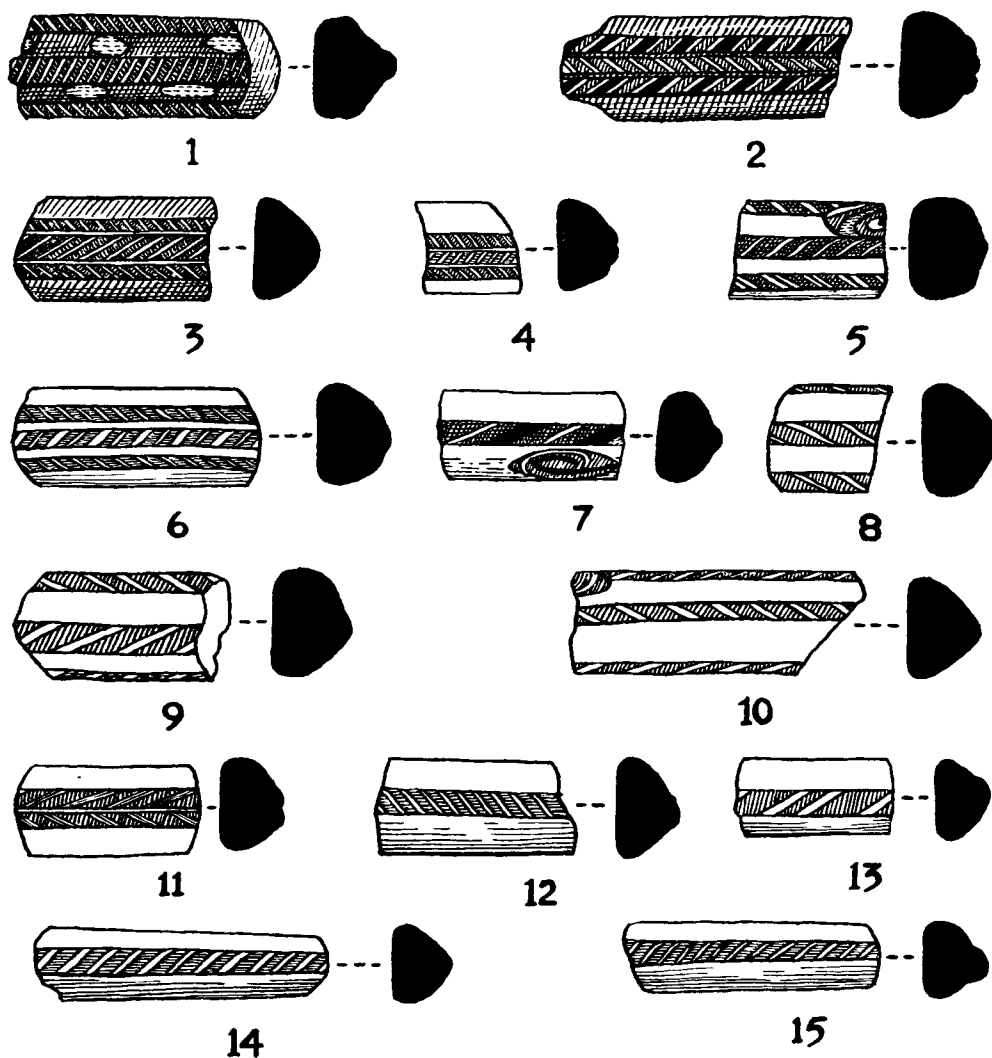


Fig. 3. Glass Armlets of Type 2. Nos. 1, 3, 6, 8, 9, 12, 13, 14, Traprain Law; Nos. 2, 4, 11, 15, Newstead, Roxburghshire; No. 5, Whitehall, Earlston, Berwickshire; No. 7, Chesterhall, Bowden, Roxburghshire; No. 10, Borness Cave, Kirkcudbright. (†).

The middle cord moulding is in white and blue, but the other two cord mouldings are in red, white, and blue. A fragment of a similar armlet

was found in the Roman fort at Manchester.¹ It will be noticed that in these examples the cord mouldings protrude slightly above the surface of the armlets: no attempt has been made to grind them down. But, in the case of fig. 3, No. 3 (from Traprain Law), which is also of cobalt blue, the cord mouldings of white and blue have been considerably ground down, so that the surface of the armlet is almost smoothly rounded. A fragment of a similar armlet was found at Verulamium,² but the blue and white cord mouldings stand out in relief. The colours and the grouping of the cord mouldings of fig. 3, No. 4 (another surface find from Newstead), are identical with those of the foregoing specimen, but the armlet itself is of translucent, uncoloured glass—the light bottle-green colour, which is also typical of the succeeding armlets of Type 2 (with the exception of fig. 3, No. 5), being the natural colour of the glass. In fig. 3, No. 5 (from Whitehill, Earlstoun, Berwickshire), the cord mouldings have been more widely spaced, and there is also a spot in blue, yellow and white enamel. The armlet itself is of light blue translucent glass. In the case of fig. 3, No. 6 (from Traprain Law), and of a similar example from the Roman fort at Housesteads, Northumberland,³ the cord mouldings are of white and blue, but the single cord moulding of fig. 3, No. 7 (from Chesterhall, Bowden, Roxburghshire) is in red, white and blue; there is also an oval spot of blue enamel, bearing red and white spirals. In fig. 3, Nos. 8 and 9 (from Traprain Law), the cord mouldings are of white and blue: a fragment of a similar armlet was found on Donald's Isle, Loch Doon, Ayrshire. Fig. 3, No. 10 (from Borness Cave, Kirkcudbright), has cord mouldings and a spot of enamel in white and blue. In the case of fig. 3, No. 11 (from Newstead), the number of cord mouldings (in this case in blue and white) has been reduced to two, whilst in Nos. 12–15 there is but a single cord moulding in blue and white. This reduction in the number of cord mouldings was brought about by the diminution in size of the armlets themselves. It is doubtful whether or not Nos. 14 and 15 were armlets at all. No. 12 of fig. 3 is from Traprain Law: identical fragments of armlets were found at Caddonlea Camp, Selkirkshire, and at Newstead.⁴ No. 13 of fig. 3 is from Traprain Law: identical specimens were found at Newstead, and at Corbridge, Northumberland. No. 14 of fig. 3 is from Traprain Law: an identical specimen was found in the Roman fort at Elslack, Yorkshire.⁵ No. 15 of fig. 3 is from Newstead: others like it were found at Traprain Law, and also at the Roman fort at Chesters, Northumberland.

¹ Bruton, *The Roman Fort at Manchester*, pl. 42.

³ *Arch. Æl.*, vol. xxv. p. 286.

⁵ *York. Arch. Journ.*, vol. xxi. p. 152.

² Wheeler, *Verulamium Report*, p. 210.

⁴ Curle, *Newstead*, pl. xci.

The following table shows the contexts in which the Traprain Law specimens were found:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
			No.	No.
Fig. 3	1	..
	3	..
	6	..
	8	..
	12	..
	13
	14
	like 15	
Total Armlets	6	2

The evidence from Traprain Law is thus in favour of a second-century date for Type 2, since the majority of the fragments found on that site came from the third level. Whether or not this is a true indication of the period in which this type of armlet was in favour is not very clear. It would almost seem that this dating is too late, in view of our previous remarks in regard to form. In addition, we have to face the fact that the Elslack specimen, a later form than No. 1 of fig. 3, was found at a depth of 5 feet on a site which is probably Flavian in date, since a large proportion of the pottery is attributable to the first century. Reconstruction apparently did not take place before 210, and that date does not accord well with the Traprain Law evidence. The matter is further complicated by the discovery of the Verulamium specimen in the third-century debris over the "triangular" temple.¹ The Newstead finds were mostly surface finds, whilst the specimens from Corbridge and Chesters are unlocalised, and therefore cannot be dated. The Housesteads specimen, however, is said to have been found in a secondary clay floor in barrack room vi, 2.² Mr I. A. Richmond informs the author that the pottery from this floor cannot now be traced, otherwise it would have been possible to date this specimen. Even so, it would perhaps be as well to assume that the levels in which the Traprain Law specimens were found give us the period when armlets such as these were either lost or discarded, and that armlets of Type 2 were really manufactured in the latter part of the first century and the first half of the second century.

The type has a rather curious distribution. It did not penetrate

¹ Wheeler, *Verulamium Report*, p. 210.

² *Arch. Æl.*, vol. xxv. p. 286.

north of the Forth, is chiefly found in the district between the Antonine Wall and Hadrian's Wall, but single specimens found their way to Elslack, Manchester, and even to a site as remote as Verulamium. This distribution is the very antithesis of the distribution of Type 1: conditions in the country must have been reversed; from a supposed trade barrier originally having been in the south (as seemed evident from the absence of armlets of Type 1 even in the Hadrian's Wall district), by the time that armlets of Type 2 were being made a second trade barrier seems to have been where the Antonine Wall is situated. At least one fact emerges from a study of this distribution: the Roman invaders had already established dominion over the Lowlands, and Romans or Romano-Britons were at least carrying glass armlets southwards on their persons, although they were not engaged in trading these objects.

Type 3.—The remaining armlets which will now come under our notice may be said to belong to a single type. That this is so can be easily seen from the standardisation of form which is throughout apparent: we have only got to ignore the differences in colour to observe that we are dealing with what is essentially the same type of armlet. Even the methods employed for decorating a plain surface, not by bands of enamel or by cord mouldings, but by inlay of various colours, done at first in the form of artless meanders, is the same throughout. But, since a single combination of colours is so often repeated, each armlet bearing such a combination of colours can be said to belong to a sub-type of Type 3.

In section, armlets of Type 3 are roughly triangular: but variations on the standard form occur, owing to the fact that sometimes one angle is apt to be rounded-off, and sometimes all three angles are so treated. But the armlet is, nevertheless, essentially triangular in section, in spite of these minor changes. Further, these minor changes in form were not purely accidental, because it so often happens that a single variation in the strictly triangular form is frequently repeated: this may be due, in some degree, to the fact that a single mould (and it seems that stone moulds were used) might have been responsible for the shaping of numerous examples on a single site; but it is further to be observed that specimens found on fairly widely separated sites also show exactly the same characteristics. Even so, a suitable explanation might be provided by the assumption that all these specimens exhibiting similar characteristics possessed a common origin, an idea which we find rather attractive.

In any case, it is extremely doubtful whether or not we are justified

in attributing any typological significance to these minor changes: except in so far as we have distinguished three main types, and a certain number of sub-types of one of these main types, typology may be regarded as being of little assistance to us in our present study.

Amongst the several sub-types of Type 3 there is little justification for choosing one rather than another for primary consideration; but we pick upon the opaque white armlet, because, not only is it the commonest form of all glass armlets, it is also one of the few forms which can be dated, even if only approximately. This, then, is our first sub-type—Type 3, A.

Type 3, A.—A complete armlet from Flanders Moss, Stirlingshire, is shown in fig. 4, No. 1. Its internal diameter is $2\frac{5}{16}$ inches, and it is

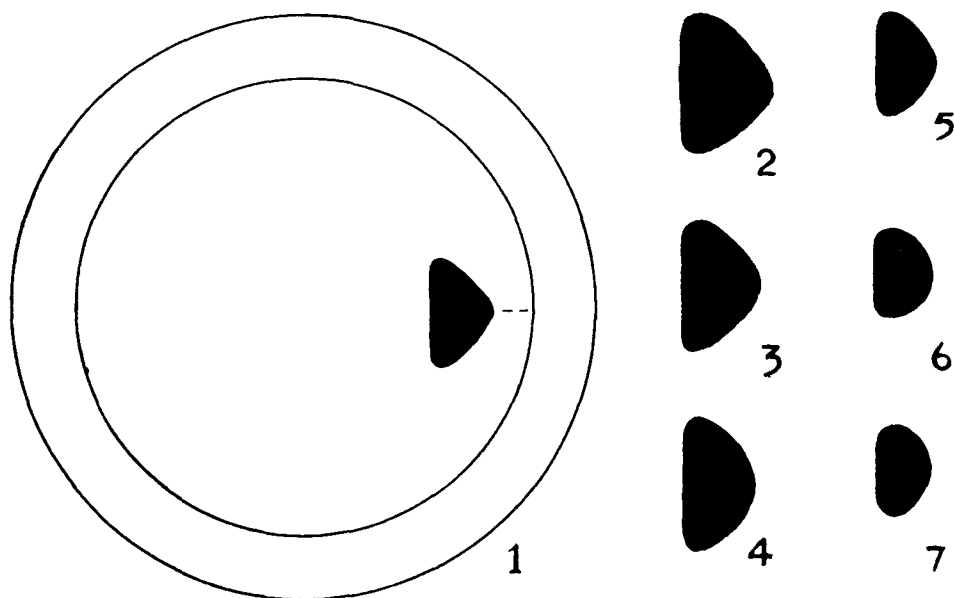


Fig. 4. Glass Armlets of Type 3, A. No. 1, Flanders Moss, Stirlingshire; No. 2, Borness Cave, Kirkcudbright; No. 3, Traprain Law; No. 4, Archerfield Cave, Dirleton, E. Lothian; Nos. 5, 6, 7, Traprain Law. (†).

triangular in section. A fragment of an identical specimen was found in the Roman fort at Corbridge, Northumberland. Obviously, since armlets of Type 3, A, are so common (88 fragments were found at Traprain Law), it is only possible here to illustrate a few representative sections. There are, of course, as we would expect, very slight variations in other specimens from the examples selected; but, in general,

it may be said that the six sections illustrated in fig. 4 are actually representative of the 104 specimens which have come under our notice. In view of the almost complete absence of intermediate forms, the remarks set down above apply with particular force to the opaque white glass armlet.

With the change of section, the gradual diminution in size is notable. The heaviest known fragment is the example from Borness Cave, Kirkcudbright (fig. 4, No. 2). A less heavy, though similar, form is No. 3 of fig. 4, which is well represented at Traprain Law (where 18 examples were found), and fragments of armlets of this form were found also in the Dowalton Loch crannog, Wigtownshire,¹ in the broch of Edin's Hall, Berwickshire,² in the Roman fort at Corbridge, Northumberland, and in the very remarkable native settlement situated between the Roman Wall and Vallum at Milking Gap, High Shield, in the same county.³ A fragment of what may have been a similar form was found at Greaves Ash, Linhope.⁴

Deviating little in respect of form, but decreasing in weight, armlets of Type 3. A (as in fig. 4, No. 5) continue to be well represented at Traprain Law, where a further 20 examples were found: an identical specimen was found on the Glenluce Sands, Wigtownshire. Henceforth we note that attention was turned to rounding-off the angles: in the case of fig. 4, No. 4 (from Archerfield Cave, Dirleton, East Lothian), it was the apex which was rounded-off. There are seven examples of this form from Traprain Law, whilst others were found in the Dowalton Loch crannog, and at the Roman fort at South Shields, Co. Durham. Next, all three angles were rounded, as in fig. 4, No. 6. Ten fragments of this form were found at Traprain Law, and a single specimen at Birrenswark, Dumfries.⁵ The steady decrease in weight of the armlet brought about a still further rounding-off of the angles, as in the case of fig. 4, No. 7 (10 examples from Traprain Law), until finally we have the opaque white glass ring pendant, slender and light in weight, a form which is fairly widespread, and a complete example of which is illustrated in fig. 5, No. 1. Its internal diameter is only $1\frac{1}{2}$ inch, which seems to have been a standard size, as we shall see presently. No less than 19 fragments like it were found at Traprain Law, whilst 1 was found at Birrenswark, Dumfries, 3 at Housesteads, Northumberland,⁶ and 1 at Corbridge, in the same county.

Bosanquet thought that these diminutive examples were children's

¹ *Arch. Coll. of Ayr and Galloway*, vol. v. p. 103.

² *Arch. Æl.*, 4th series, vol. xv. p. 345.

³ *Proc. Soc. Ant. Scot.*, vol. xxxiii. p. 247.

⁴ *Proc. Ber. Nat. Club*, 1879-81, pl. iv.

⁵ *Proc. Ber. Nat. Club*, 1857-62, p. 293.

⁶ *Arch. Æl.*, vol. xxv. p. 286.

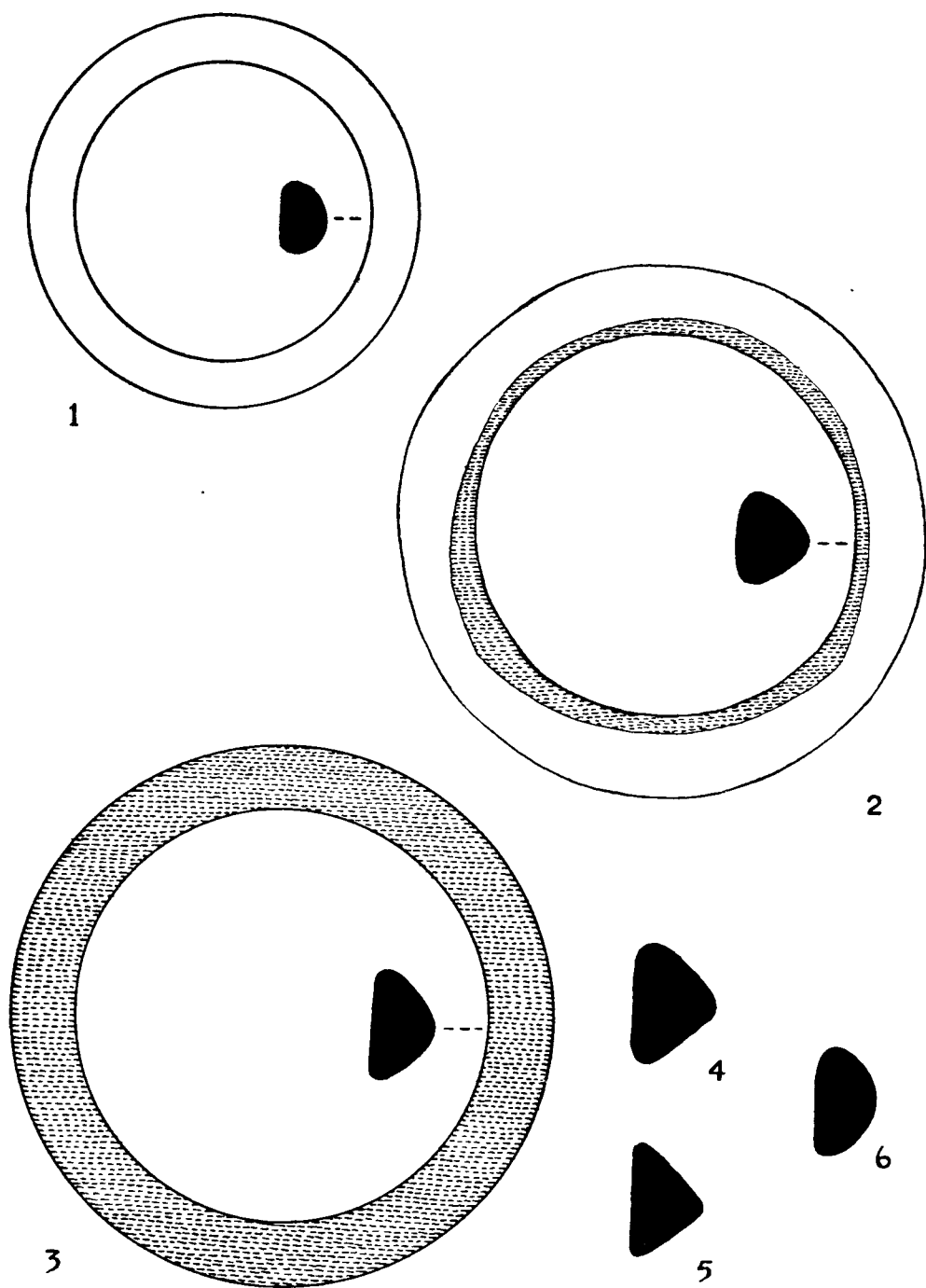


Fig. 5. Glass Armlets of Types 3, A-B. *Type 3 A*: No. 1, Traprain Law, E. Lothian; No 2, Boghead, Kintore, Aberdeenshire. *Type 3 B*: No. 3, Dowalton Loch Crannog, Wigtownshire; Nos. 4, 5, 6, Traprain Law. (1).

armlets, an ascription which need not be taken seriously. They were ring pendants, as we have said: they were probably suspended from a torc. Slightly heavier examples, dating from la Tène I. times, are known on the Continent: Déchelette¹ figures specimens from Ciry-Salsogne, Aisne, and these show clearly the manner in which they were suspended from the torque.

The following table shows the contexts in which the Traprain Law specimens were found:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 4, No. 3 . . .	3	3	5	6
„ „ „ 4 . . .	1	1	3	4
„ „ „ 5 . . .	1	6	6	7
„ „ „ 6 . . .	1	6	3	..
„ „ „ 7 . . .	..	..	4	6
„ fig. 5, No. 1 . . .	3	7	5	5
Total Armlets . . .	9	23	26	28

Collectively, it would seem that armlets of Type 3, A, were made over a period of some length—in fact from the first till the fourth century, there being a greater output during the first and second centuries than at any other time; but we do not feel happy about the late dating of several of the armlets, unless, of course, they really were made long after all other types had long been forgotten. So far, we have no support from elsewhere for the late dating: but positive evidence is forthcoming for an early second-century dating, and even for a first-century dating, if we can place any reliance in the published statement with regard to the three fragments from Corbridge, which are said to have been found in the so-called sanitary ditch.² This ditch is supposed to be contemporary with the “early fort”; but whether or not the term “early fort” applies to the Flavian foundation is not very clear: Mr Eric Birley counsels the author to treat the evidence with extreme reserve. The specimens from Dowalton Loch were found in a crannog which also yielded a rim of samian of form 37,³ so that the armlet might conceivably belong to the early second century. But the most positive evidence comes from

¹ *Manuel*, II. p. 1322.

² *Arch. Æl.*, vol. xii. p. 235.

³ *Arch. Coll. of Ayr and Galloway*, vol. v. p. 101. See also *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 284.

the native settlement at Milking Gap, High Shield, Northumberland. Here occupation of the site was from A.D. 122 to 180, but was most intensive from 122 to 150.¹ It would therefore probably be correct to assume that the armlets of Type 3, A, found there belong to the first half of the second century. On the other hand, the single specimen found at Elslack might have got there some time after the reconstruction of the fort had been carried out in the early third century.

Like the armlets of Type 2, those of Type 3, A, are chiefly confined to the district between the Antonine Wall and Hadrian's Wall. The southernmost example is that from Elslack.

Type 3, B.—The Dowalton Loch crannog yielded another armlet (shown completed in fig. 5, No. 3) which is identical in every way with the armlets of Type 3, A, except that, instead of being opaque white, it is opaque yellow. Armlets of the new type are scarcer than those of Type 3, A, and they do not seem to have been manufactured for so long a period as the opaque white type.

There are 17 fragments of armlets, exactly like the Dowalton Loch specimen, from Traprain Law: others like it were also found at Birrenswark and at Corbridge. There are 2 fragments like fig. 5, No. 4, from Traprain Law. No. 5 of fig. 5 is a curious specimen, triangular in section: this and another like it were found at Traprain Law. There are 4 fragments of armlets like fig. 5, No. 6, from Traprain Law, and another was found in Borness Cave, Kirkcudbright.

The contexts in which the Traprain Law specimens were found seem to suggest that armlets of Type 3, B, were not favoured for so long a period as were those of Type 3, A.

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 5, No. 3	2	7	8
" " " 4	2
" " " 5	1	1
" " " 6	2	2	1
Total Armlets	4	10	12

¹ *Arch. Æl.*, 4th series, vol. xv. p. 341.

Thus the evidence from Traprain Law suggests that armlets of Type 3, B, belonged chiefly to the late first and to the second century. The fragment from the Dowalton Loch crannog may be said to be contemporary with the fragment of Type 3, A, found there, and this fact tends to emphasise an early second-century date for the fragment of opaque yellow armlet. The distribution of armlets of Type 3, B, seems to be the same as that of armlets of Type 3, A.

A very curious complete armlet is the specimen from Boghead, Kintore (fig. 5, No. 2). Compared with the above armlets, it appears to have been rather crudely made; it is also somewhat irregular in form, whilst the surface is unusual—it lacks the high gloss which is so characteristic a feature of the armlets considered above. Also, its section is like none of the armlets which we have so far considered. In general, the Boghead armlet is opaque white, but the inner surface has been enamelled with opaque yellow, as may be seen from the illustration. So queer a result and so irregular a form can only be the work of a local artificer, who seems to have been relying on memory for the pattern which he was endeavouring to imitate. These details are, however, significant, as we shall show later on.¹

Efforts were made to relieve the tedium of a plain opaque white surface. Presently, therefore, we find that some armlets of our Type 3, A, begin to bear upon their outer surfaces scrolls of blue or yellow. These scrolls, which are in the form of inlay, were at first applied in a haphazard fashion: these remarks apply in particular to the opaque white armlets decorated with blue inlay, which form another sub-type of Type 3—Type 3, C. When, however, we come to a fourth sub-type—Type 3, D—consisting of opaque white armlets with yellow inlay, it will be noted that the scrolls of the inlay are not quite so aimless, but are tending to assume a standard form typical of all the later armlets.

Type 3, C.—All of the known specimens of this type, with one exception, are illustrated in fig. 6, Nos. 1–11, and fig. 7, Nos. 1–4. It will be noted that the scrolls are as varied as are the sections of the armlets. The sections themselves cover all the forms which we have already noted in dealing with the armlets of Type 3, A. Fig. 6, No. 1, is half of an armlet from the crannog in Dowalton Loch. Fig. 6, Nos. 2–5 and No. 8, and fig. 7, Nos. 1–4, are from Traprain Law. Fig. 6, No. 6, is from Peel Crag Turret, on Hadrian's Wall, and fig. 6, No. 8, is from High Shield Turret, near-by. Fig. 6, Nos. 10 and 11, are from Corbridge.

¹ See p. 394.

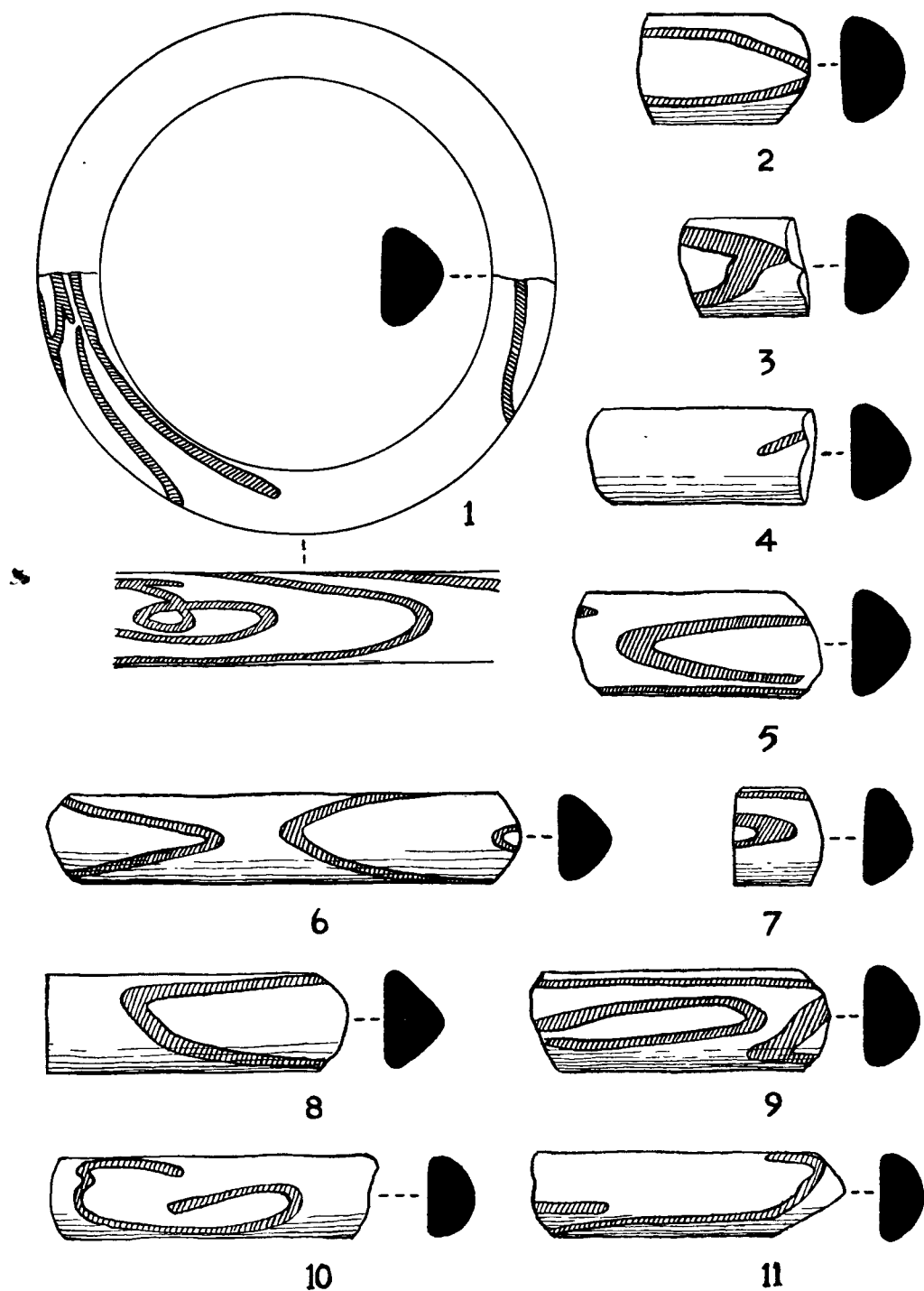


Fig. 6. Glass Armlets of Type 3, C. No. 1, Dowalton Loch Crannog, Wigtownshire; Nos. 2, 3, 4, 5, 7, 8, Traprain Law; No. 6, Peel Crag Turret, Hadrian's Wall; No. 8, High Shield Turret, Hadrian's Wall; Nos. 10, 11, Corbridge, Northumberland. ({}).

None of the four last-named fragments is datable, but the Traprain Law examples were found in the following levels:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
	No.	No.	No. 2	No. 3
Fig. 6 . . . {	..	..	.. 4	..
	..	..	.. 5	..
	..	7	..	..
Fig. 7 . . . {	..	..	.. 1	..
	..	..	..	.. 2
	..	..	.. 3	..
	4	..	..	..
Total Armlets .	1	1	5	2

If the Traprain Law evidence be acceptable, it would seem that the idea of relieving a plain surface with coloured inlay is almost as old as Type 3, A, itself. This view finds support in the discovery of a fragment of an armlet of Type 3, C, in the Hyndford Crannog, Lanarkshire,¹ where, in addition, fragments of samian bowls of forms 29, 30 and 37, and cups of forms 27 and 35 were also found,² pottery which is unmistakably of Flavian date. Such a discovery is valuable in that it shows that the glass armlet industry was already well established when Agricola advanced into Scotland.

Armlets of Type 3, C, are only found in the district between the Antonine and Hadrian's Walls.

Type 3, D.—Opaque white armlets bearing yellow inlay are not so common as are those of Type 3, C. But, since they are so very similar to the armlets of Type 3, C, except in the matter of the colour of the inlay, only a selection of three examples is shown in fig. 7, Nos. 5–7. Nos. 5 and 6 are from Traprain Law: there are other four examples, similar in every way, from the same site. No. 7 is from Birrenswark.

The various levels at Traprain Law yielded the following numbers of fragments of armlets of this type:—

¹ *Proc. Soc. Ant. Scot.*, vol. xxxiii. p. 384.

² *Ibid.*, vol. lxvi. p. 381.

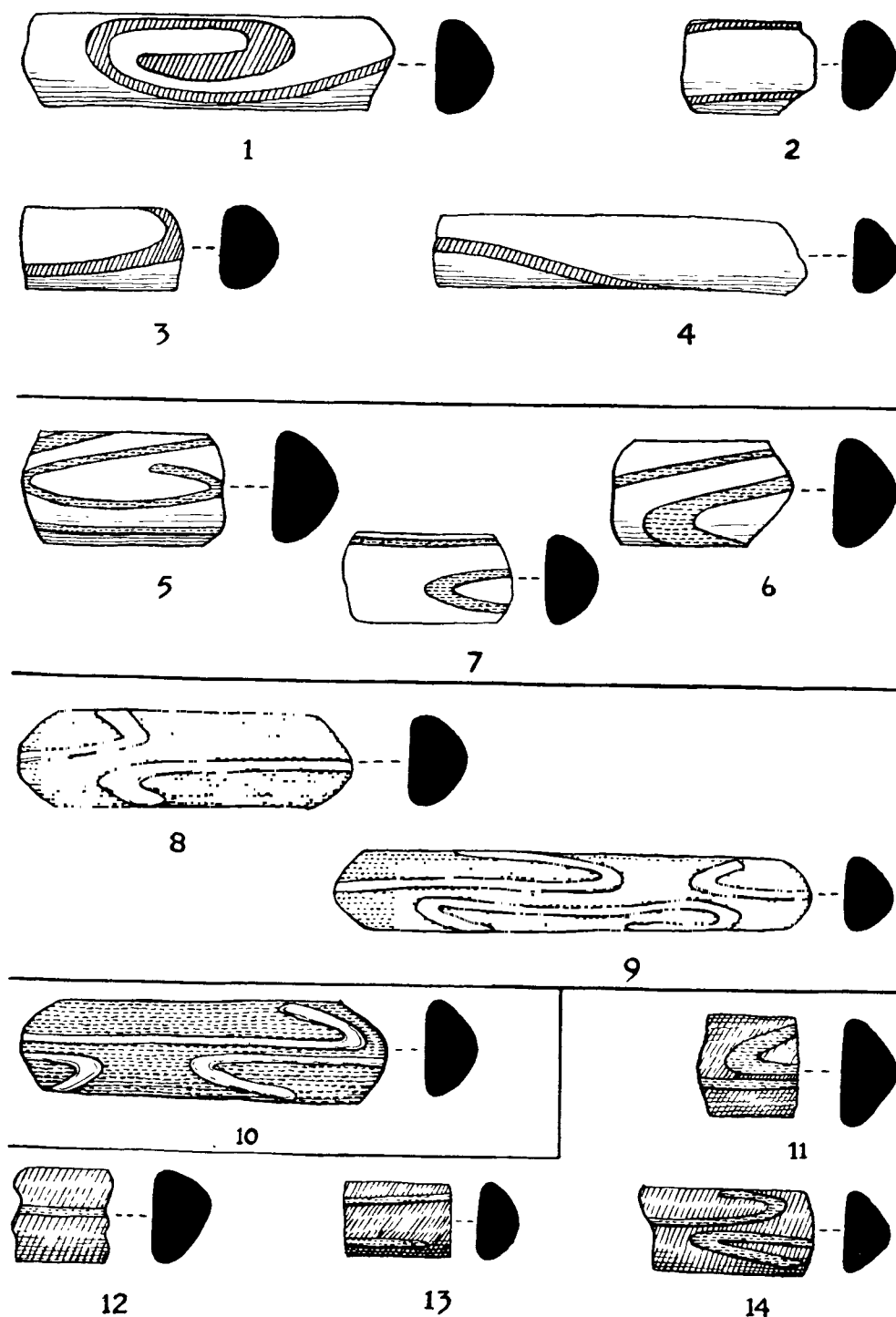


Fig. 7. Glass Armlets of Types 3, C-E, and J. *Type 3, C*: Nos. 1-4, Traprain Law. *Type 3, D*: Nos. 5, 6, Traprain Law; No. 7, Birrenswark, Dumfriesshire. *Type 3*: Nos. 8, 9, Traprain Law. *Type 3, E*: No. 10, Traprain Law. *Type 3, J*: Nos. 11, 12, Traprain Law; No. 13, Sandyknowe, Roxburghshire; No. 14, Throp, Gilsland, Cumberland. (1).

Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
1	..	3	2

Thus, the armlets of Type 3, D, tell much the same story as did those of Type 3, C. It should also be remembered that the Birrenswark specimen may possibly be dated by the leaden glandes which were found there, glandes which are thought to date from Flavian times.¹ This association of the armlet and the leaden glandes perhaps lends support to the earlier Traprain Law dating.

Type 3, E.—Strangely enough, only a single fragment of an opaque yellow armlet bearing inlay has so far been discovered: it was found in the second level at Traprain Law (fig. 7, No. 10). The inlay is of opaque white. Here, for the first time, we have the inlay applied in a standardised form, a form that remained unaltered for almost the whole of the remaining history of the glass armlet.

Two apparently unique fragments from Traprain Law (fig. 7, Nos. 8 and 9) belong to armlets of a dark olive-green colour. They bear inlay in opaque white. No. 9, amounting to almost half the armlet, was found in the fourth level, whilst No. 8 came from the third level.

Type 3, F.—These armlets are of uncoloured translucent glass with opaque white inlay. Sometimes the glass looks very like Roman bottle-glass, and sometimes it is as colourless as modern window-glass. A selection of armlets of this type, which is fairly widespread, is shown in fig. 8, Nos. 1–6. No. 1 is from the Roman fort at Newstead; No. 2 is from Traprain Law, and there are two other specimens like it from the same site. No. 3 was found in the Roman fort at Castlecary, Stirlingshire: there are six other fragments like it from Traprain Law. No. 4 is from the Roman fort at Corbridge, Northumberland: two other specimens like it were found at Traprain Law, and two more at the Roman fort at South Shields, Co. Durham. No. 5 was found on the site of the Tullie House Museum, Carlisle. No. 6 is half of a glass ring pendant; it was found at Traprain Law, and there are 16 fragments like it from the same site. A fragment, similar in every way, was found

¹ *J.R.S.*, vol. ix, p. 134.

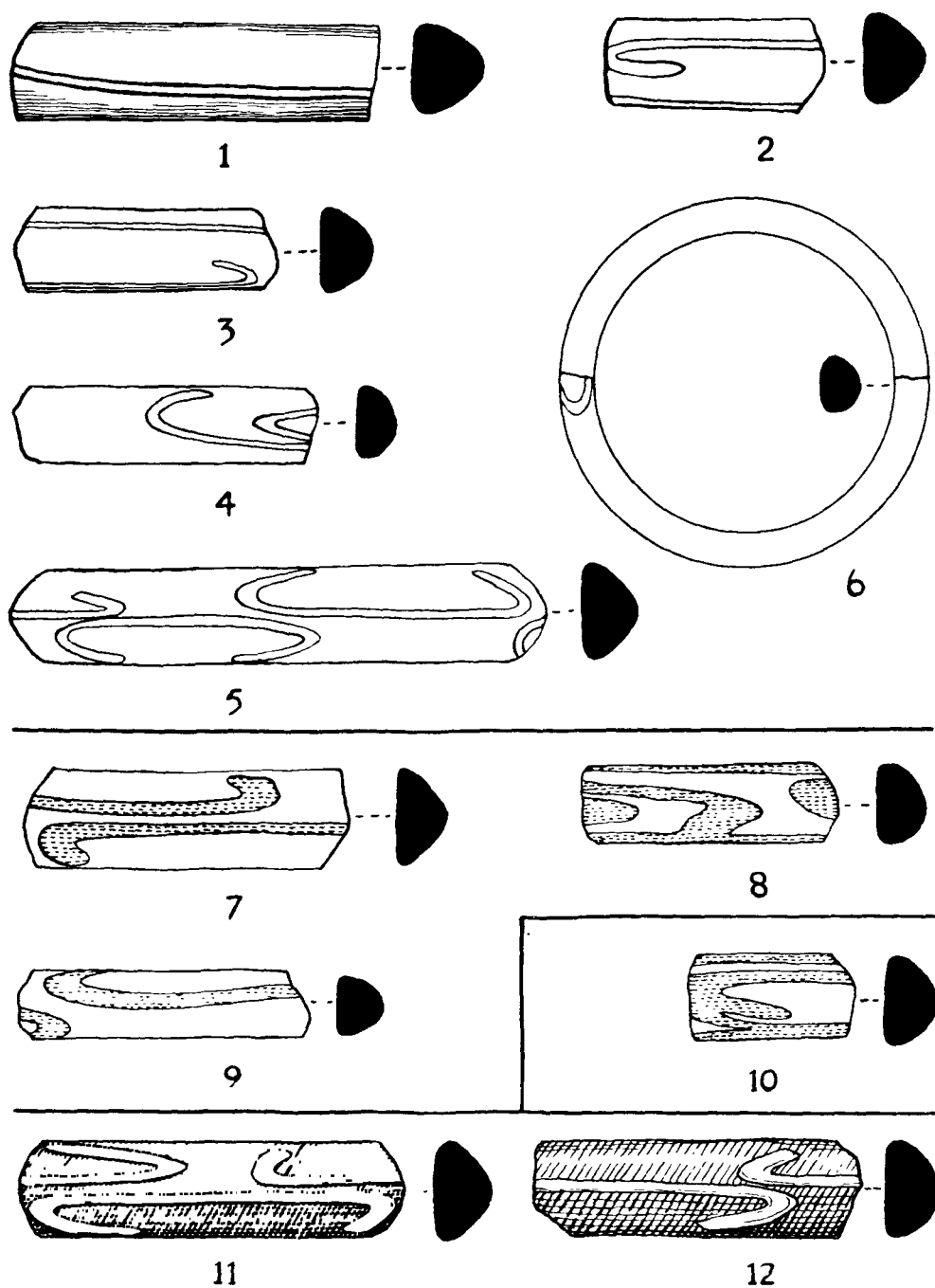


Fig. 8. Glass Armlets of Types 3, F-I. *Type 3, F*: No. 1, Newstead, Roxburghshire; Nos. 2, 6, Traprain Law; No. 3, Castlecary, Stirlingshire; No. 4, Corbridge, Northumberland; No. 5, Tullie House, Carlisle, Cumberland. *Type 3, G*: Nos. 7, 9, Corbridge, Northumberland; No. 8, Traprain Law. *Type 3, H*: Torwoodlee, Galashiels, Selkirkshire. *Type 3, I*: No. 11, Milking Gap, High Shield, Northumberland; No. 12, Camelon, Stirlingshire. ($\frac{1}{4}$ in.)

at Newstead, and two others at Corbridge. The internal diameter of these glass pendants is precisely the same as that of the pendants of Type 3, A—namely, $1\frac{5}{8}$ inch.

The specimens from Traprain Law were found in the following levels:—

	Level 1 (Top).	Level 2.	Level 3.	Level 4 (Bottom).
Like fig. 8, No. 2 .	1	1	1	..
„ „ „ 3 .	..	1	4	1
„ „ „ 4 .	1	..	1	..
„ „ „ 6 .	3	6	5	1
Total Armlets . .	5	8	11	2

On this evidence it seems that the manufacture of armlets of Type 3, F, may not have been begun before the beginning of the second century. Particular notice should be made of the contexts in which the glass ring pendants (like fig. 8, No. 6) were found, because the dating of the pendants belonging to Type 3, F, seems to be precisely the same as that of the pendants of Type 3, A.

Armlets and pendants of Type 3, F, are better represented on Roman sites than any of the preceding or following types. But, like all armlets of Type 3, they are found only in the district between the Antonine Wall and Hadrian's Wall.

Type 3, G.—A variation in the colour of the inlay is provided by the fragments of armlets illustrated in fig. 8, Nos. 7–9. Here we have the same translucent, uncoloured glass armlet, but the inlay, instead of being opaque white, is opaque yellow. No. 7 is from the Roman fort at Corbridge. No. 8 is from Traprain Law, and there is another fragment like it from the same site. No. 9 is also from Corbridge, and there are two other fragments like it from the same site.

Of the Traprain Law specimens, two were found in the second level, one in the third level, and one in the fourth level.

Type 3, H.—Fig. 8, No. 10, is a fragment of a rare type; it was found in the broch at Torwoodlee, Galashiels, Selkirkshire. A minute frag-

ment of an exactly similar armlet was found in the native settlement at Milking Gap, High Shield, Northumberland.¹ The armlets of this type are like those of Type 3, G, in every way, except that the glass of the armlet itself is of a peculiar yellowish-green tint.

The Milking Gap fragment can definitely be dated to the second century, whilst the Torwoodlee fragment may possibly be dated by the first-century samian which was found within the broch.²

Type 3, I.—Another very characteristic though rather rare sub-type is constituted by the armlets of deep, translucent cobalt blue with white inlay. The only three examples which we possess are widely separated: one was found in the Roman fort at Camelon, Stirlingshire (fig. 8, No. 12), a second was found in the native settlement at Milking Gap, High Shield, Northumberland (fig. 8, No. 11), whilst the third fragment was found in the Roman fort at South Shields, Co. Durham.

The Milking Gap fragment can definitely be dated to the second century,³ and almost certainly to the first half of that century. There is a possibility that the Camelon fragment may be contemporary with the occupation of the fort in pre-Antonine times.

Type 3, J.—There remains but one further sub-type of Type 3—blue armlets with opaque yellow inlay. The blue of the glass is much paler than the deep cobalt blue of the armlets of Type 3, I; it might almost be termed a mid-blue. All the known examples of Type 3, J, are illustrated in fig. 7, Nos. 11–14, and fig. 9, No. 1. Nos. 11 and 12 of fig. 7 were found at Traprain Law; No. 13 is from Sandyknowe, Roxburghshire; No. 14 is from the Roman fort at Throp, near Gilsland, Cumberland. No. 1 of fig. 9 is from the Roman fort at Corbridge.

The Traprain Law specimens were found in the second and third levels, but the fact that they were found in these levels can hardly be an accurate guide to the date of the armlets of this sub-type, seeing that the specimen from Throp came from a site that seems to have been occupied during the reign of Hadrian: a fort that was probably erected in about 110.⁴ Probably the armlets of Type 3, J, belong to the second century.

Lastly, there are four curious examples that call for attention: they are illustrated in fig. 9, Nos. 2–5. In each case the armlet is of the same mid-blue which was typical of the armlets of Type 3, J. But fig. 9,

¹ *Arch. Æl.*, 4th series, vol. xv. p. 346.

³ *Arch. Æl.*, 4th series, vol. xv. p. 341.

² *Proc. Soc. Ant. Scot.*, vol. lxvi. p. 367.

⁴ *Trans. C. and W.*, n.s., vol. xiii. p. 374.

No. 2, has both yellow and white inlay; No. 3 has white spots and a marginal inlay of white; No. 4 has white spots with blue centres, and white inlay on the apex of the armlet; No. 5 has white inlay and blue spots with a white spiral. Nos. 2 and 3 were found at Corbridge, No. 4

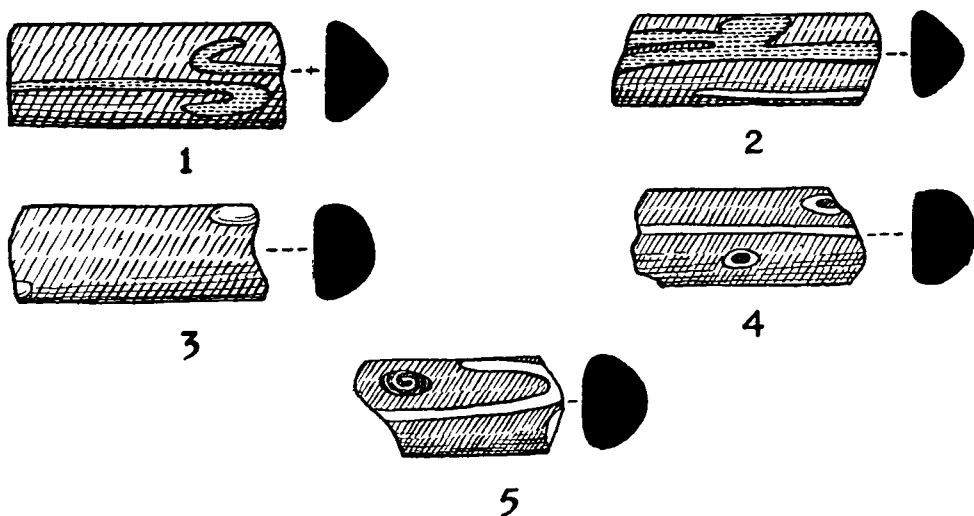


Fig. 9. Glass Armlets of Type 3. Nos. 1, 2, 3, Corbridge, Northumberland; No. 4, Traprain Law; No. 5, Newstead, Roxburghshire.

at Traprain Law, and No. 5 at Newstead. There is another specimen from Traprain Law, and it is like No. 2.

The two Traprain Law specimens were found in the bottom and third levels.

DISCUSSION.

We have examined roughly 270 fragments of glass armlets. We have divided them up into three main types, and the third type into ten sub-types. We have tried to reach conclusions in regard to the period in which each of the three main types was made, and we decided that the armlets of Type 1 were manufactured in the latter half of the first century A.D., but preceding the time of Agricola's advance into Scotland; that the armlets of Type 2 were probably made during the early years of the Roman occupation of the Lowlands; and that the armlets of Type 3 were most favoured during the second century, but that the type was known in the late first century, and, indeed, the first-century armlets of Type 3 seemed to us to be very nearly contemporary with those of Type 2: that was shown by the association of a fragment

of an armlet of Type 3 with a late example of Type 2 at the Hyndford crannog, both fragments being dated to the time of Agricola's advance into Scotland. This association of two types at the Hyndford crannog only served to emphasise what had seemed to us probable when dealing with the Traprain Law evidence: namely, that the armlets of Type 3 were first manufactured at a time when the apparently short history of those of Type 2 was drawing to a close. The armlets of Type 2 fill a comparatively short gap in time which exists between the period when armlets of Type 1 were being made and the advent of the first armlets of Type 3.

We also studied the distribution of each of our three main types, and we discovered that the armlets of Type 1 occur north of Hadrian's Wall and as far north as the Moray Firth and Skye; that the armlets of Types 2 and 3 have more or less the same distribution and, in contrast, are almost entirely confined to the district between the Antonine Wall and Hadrian's Wall. We can understand why it was that armlets of Type 1 never got farther south than Roxburghshire: the Roman advance into North Britain could hardly be expected to stimulate trade with the south. But it is difficult to understand why it was that, when Roman authority had been forced upon the natives in the Lowlands, neither armlets of Type 2 nor those of Type 3, all of which were made after Agricola's advance into Scotland, ever penetrated into the country south of Hadrian's Wall. We have just the two fragments of armlets of Type 2 which were probably carried south as curiosities, but, especially when we consider the armlets of Type 3, which were made at a time when conditions in the country may be said to have improved, we are at a loss to know why it was that armlets of Types 2 and 3 did not penetrate at least as far south as the Midlands. It is true that armlets have been found on sites a mile or two south of the Wall, like Corbridge, but that fact makes little difference to the general conclusions which are forced upon us.

Last year the present author was severely criticised because he had remarked, when dealing with the evolution of the penannular brooch with zoomorphic terminals, that Hadrian's Wall seemed to have formed an effective barrier to free trade between north and south in the second century.¹ That thought was frankly regarded as a heresy. Of course, it must be admitted that numbers of objects of Roman origin were being exported to Scotland² (or at least they were being acquired in the north), but the thesis should have enlarged by emphasising that what was really

¹ *Proc. Roy. Irish Acad.*, vol. xliii., section C, p. 393.

² As a matter of fact, the volume of trade with Scotland was considerable.

meant was that, chiefly during the second century, Hadrian's Wall seemed to have formed an effective trade barrier against native-made products proceeding southwards. And the fact remains. As we saw last year, not a single Lothians-made zoomorphic penannular brooch of the *northern developed form* ever found its way beyond the Wall, yet brooches of this type reached Northern Ireland and even a country as remote as Shetland. On the other hand, we find an Irish-made specimen of the same type of brooch, and dating to approximately the same period, at Bravoniacum, Westmorland. This quite obviously means that it was a far easier matter for the inhabitants of the north of England to acquire an Irish-made brooch of this particular type than it was for them to acquire an example made in Caledonia. That fact is significant. But that is not all: we have four Lothians-made zoomorphic pins at Chesters, and one at Hunnum, both sites being on the Wall itself, yet not a single specimen of this type of pin, which is also contemporary with the brooches in question, has ever been found farther south.

And now that we have concluded our examination of the glass armlets, we find that here again the story is substantially the same. We have all these glass armlets from the district between the Antonine Wall and Hadrian's Wall, yet, except for Elslack, we look in vain for them south of the Hadrian's Wall area. We can understand why it is that we do not find any specimens north of the Antonine Vallum, because that wall was a boundary between the virile native north and the Romanised district to the south. But the history of Traprain Law had seemed to teach us that that site, as a Romano-Caledonian tribal capital, had enjoyed comparative prosperity, indeed perhaps its period of greatest prosperity, at a time when Roman rule was more or less firmly established in the Lowlands, and we therefore assumed that the inhabitants, seeing that they continued to flourish in their hill-top town, must have done so with Rome's permission. We pictured their behaviour as being satisfactory to the Romans. That being so, it might have been thought that they would have been at liberty to enjoy uninterrupted trade relations with other Romano-Britons south of Hadrian's Wall, yet the verdict is forced upon us that they enjoyed no such privileged position.

We are not assuming, of course, that Hadrian's Wall was purely a military barrier: we wish to draw a distinction between a military barrier and a trade barrier. We believe that it was chiefly the latter, and Romans and Romano-Britons used it to their own advantage, because it permitted southern-made things to be exported to the north, but it prevented objects (such as brooches, pins and glass armlets) made in

Scotland from penetrating southwards. We must accept that fact if we assume that the abundance of Roman ware found on Traprain Law was purchased by the inhabitants rather than that most of it was stolen. The Romans, with the virtual dominion of the Lowlands in their hands, could hardly be expected to tolerate in their midst flourishing banditti.

On the other hand, we must not overlook the fact that the district between the two Walls was never other than a military district. We look in vain for remains of a settled urban life: there are no traces of buildings other than those required for the occupation of a military force. This means that, although the Romans managed to retain their hold on the Lowlands for the best part of a century, they could never have felt very secure. There must have been cause for constant anxiety, as the history of the Antonine Vallum tends to demonstrate. It is instructive, also, to survey the conditions during the same period of the natives themselves; to compare the conditions of those living just to the south of Hadrian's Wall with those living north of the same Wall. The differences are striking. South of the Wall the natives, little affected by contact with Roman civilisation, led such a sheltered existence in the second century that they formed themselves into small farming communities, and lived in clachans that were entirely innocent of any means of defence. There are actually one or two of these settlements in Northumberland a few miles north of the Wall, but the large majority are in Cumberland and Westmorland. In contrast, what are the conditions in the Lowlands generally? We look in vain for any northern equivalent of the undefended clachans so commonly found south of Hadrian's Wall. And to complete our mental picture of conditions in the Lowlands, we have only to recall to mind the disaster of 196; with what obvious satisfaction the northern tribes seized on a moment of weakness on the part of those who had endeavoured to pursue their civilising mission amongst the Caledonians in order to vent their fury against the dominant power.

Hadrian's Wall was thus a dividing line, dividing a peaceful south from a turbulent north, even during the second century. It is obvious that everyone who wished to cross the frontier must have been subjected to strict examination—especially those coming from the north. This makes it difficult for us to accept the view that numbers of cattle, wild animals, slaves, and quantities of leather, fur, and so forth were constantly being exported from Caledonia into England.¹ It is obvious that the whole conception of trade across the frontier needs drastic revision. It was a one-way trade, if trade it was. Even modern tariff walls cannot

¹ Collingwood, *Roman Britain*, p. 245.

keep out foreign-made objects; and yet Hadrian's Wall effectively kept out of England to the south what was made in Caledonia to the north.

These considerations make it even more necessary for us to set down an opinion as to the position of the original source of the glass armlets. Actually, we believe that they were made at Traprain Law. The bulk of the examples which we have considered were found there, but that fact in itself is insufficient to demonstrate the probability of that statement. But we have already hailed Traprain Law as a Romano-Caledonian tribal capital, and of that fact there can be little doubt; and it is a common thing for industries to flourish in tribal capitals, where trade is brisker. But we have to admit of other tribal capitals coming within our purview. It is therefore instructive to see what are the conditions in another tribal capital—namely, Corbridge—which is rather conveniently situated for the purpose of our argument. On counting up the number of glass armlets found there we find that the total is 16 fragments. Armlets of Type 1 are absent, whilst the only specimens of Type 2 found there are two late fragments of that type. This evidence is significant, because other finds, such as metal objects, were particularly numerous. We can therefore at least be certain that glass armlets were not made in the Hadrian's Wall district. There is a possibility, of course, that excavation may yet reveal another Romano-British tribal capital in the southern Lowlands, although it is improbable that more than one capital will be found. But since the necessary evidence is lacking, we shall be content meantime in assuming that the factory was at Traprain Law.

One last aspect of the problem remains to be dealt with. Seeing that on the Continent glass armlets were made during all three phases of the La Tène period, it is perhaps surprising that neither the armlets themselves nor the method of making them ever reached England.¹ Not a single glass armlet made in England has yet been discovered. Yet, in the first century of our era, glass armlets suddenly appeared in Scotland. They were not produced by way of experiment: the earliest armlets (our Type 1) are mature both in the matter of form and of decoration. It is difficult for us to find parallels for these armlets, but the only specimen of Type 3 found in the north of Scotland—the armlet from Boghead, Kintore—has nothing approaching a parallel except on the Continent. It can be distinguished from the other armlets of that type by its surface treatment and slight irregularities in manufacture that

¹ Fräulein Thea E. Haevernick has kindly drawn the author's attention to the La Tène glass armlet from Castle Dore, Cornwall, an armlet unknown to the author at the time this statement was written.

are not apparent in the other armlets of the same type. These same slight irregularities seem to be common to some of the Continental glass armlets. In addition, the Boghead armlet has yellow enamel on its inner surface. It is difficult to appreciate the point of enamelling the inner surface, as, once the armlet was on the wearer's arm, the yellow enamel would naturally be hidden. But Déchelette figures two armlets from Montefortino, Prov. de la Marche, Italy,¹ each of which possesses a band of yellow enamel on the inner surface: but the armlets themselves, instead of being opaque white (like the Boghead example), are of uncoloured translucent glass. In the case of these Italian specimens it is easy to see what was the purpose of the band of yellow enamel: seen from the outside it would appear many times magnified by the glass of the armlet; in fact, the glass would tend to throw the colour into relief. It seems that the maker of the Boghead armlet may have had this point in mind, but he failed in his purpose because he made the armlet of opaque white glass. He also seems to have worked in something approaching isolation. But the very fact that he tried to imitate a trick current on the Continent in La Tène I. times at least points to the possible source of his inspiration.

By whom was the technique of manufacture of glass armlets brought from the Continent, as we must assume that it was, direct to Scotland?

I wish to thank those colleagues who gave me every freedom to examine armlets in the collections under their care: the late Dr J. Graham Callander; Mr A. J. H. Edwards, Director of the National Museum of Antiquities, Edinburgh; Mr Eric Birley, Secretary to the Trustees of the Chesters Museum; Mr J. D. Cowen, Curator of the Blackgate Museum, Newcastle, who was also good enough to send me sketches and particulars of the specimens in that Museum; Mr W. Percy Hedley, Secretary to the Trustees of the Corbridge Museum. Thanks are also due to Mr T. Gray and Mr R. Hogg, of the Tullie House Museum, Carlisle, for giving me access to, and particulars of, the specimens in that Museum.

¹ *Manuel*, II. p. 1323, fig. 579, Nos. 1 and 2. Another armlet of the same type was found at Monte Rolo S. Vito.

INDEX

	PAGE		PAGE
Aberbrothock, The Abbey of: Two Early Thirteenth Century Seals, . . .	56	Arm-bearers, Scottish,	87
Abercorn, West Lothian, Fragments of a Sculptured Cross of Anglian Type, now preserved in Church of, . . .	217	Armlets, Glass, in Britain,	366
Abercromby, Arms of,	103	Silver Penannular, from the Skaill Hoard, (donation)	130
Aberdeenshire: <i>see</i> Boghead, Kintore; Bridge of Don; Clova; Cullerlie; Ellon; Monquhitter; Monymusk; Tolquhon Castle.		Armorial de Berry (Scottish Section), The, . .	84
Abernethy, Arms of,	98	Arms of the Hammermen, Panel bearing, . .	11
Accounts, 1936-7, approved,	178	Arrow-head, Quartz, from farm of Trum- land, Rousay, (donation)	9
Adze, Stone, from Carinish, N. Uist, (pur- chase)	19	Asia Minor, Stone Axes, a Bronze Spear- head, and Glass Beads from, . . .	133 f.
Agnew, Col. H. C., elected,	120	Auchenleck of that ilk:—	
Altars, Roman:—		Archer, Scots Guards of French King, . .	105
at Birrens, Dumfriesshire,	279, 339	Armour-bearer,	104
from Newstead, (donation),	14	Austinus, Pottery Stamp of, Birrens, . .	330
Amandus, Valerius, Altar to Brigantia at Birrens set up by,	279	Awhirk, Wigtownshire, Bronze Bowl from, Awls or Borers, Bone, from Bac Mhic Connain, Vallay, (purchase)	137 19
Anderson, Rev. R. S. G., on a Bronze Bowl from the Rhinns of Galloway, . . .	137	Axe-hammer, Dolerite, from Nith Lodge Stone Circle,	244
Angus, Earl of, Arms of,	93	— — — — (donation)	274
— William, re-elected to Council, . . .	2	Axe-like Object, Stone, from the Island of Wyre, Orkney, (donation)	10
Angus: <i>see</i> Arbroath; Barns of Airlie; Invergowrie; Pitcur; St Vigeans; Tealing.		Axes:—	
Anniversary Meeting, 1937,	1	Iron, socketed and looped, from Rahoy, .	39
Antler, Red-deer, Oval Implement made from, found at Jarlshof,	358	— Report on,	41
Antoninus Pius, Coins of, from Birrens, .	339	Stone, Cutting Edge of, from Caithness, (donation)	9
Anvil-stone, from Dyke, Morayshire, (dona- tion)	8	— found near the Broch of Midhowe, Rousay, (donation)	9
Aqueduct at Birrens,	306	— and Axe-like Implement found in Cairn, Huntersquoy, Eday, Orkney, .	204
Arbroath, Angus, Glass Objects used in weaving, from,	11	— from Asia Minor, (donation)	133 f.
<i>See also</i> Aberbrothock.		— from Fodderty, near Dingwall, Ross-shire,	12
Archerfield Cave, Dirleton, Glass Armlet from,	378	— from Neolithic Cairn, Calf of Eday, .	213
Ardross Castle, Ross-shire, Turned Wooden Bowl from, (purchase)	21	Axes and Swords, Scottish Late Bronze Age, Ayrshire: <i>see</i> Beoch; Coilsfield; Donald's Isle, Loch Doon; Hindsward Farm, Skares; Nith Lodge; Rig Hill.	150
Argyll: <i>see</i> Rahoy, Morvern.		Bac Mhic Connain, Vallay, N. Uist, Objects from, (purchase)	19

	PAGE		PAGE
Badges:—		Birrenswark, Dumfries:—	
Beggars', Weem and St Andrews,		Glass Armlets from, .	378, 381, 384, 386
(bequeathed)	273	Ring Pendant, Glass, from, . . .	378
Chimney-sweep's, Leith, (bequeathed) .	273	Bisset, Lt.-Col. J. S., elected, . . .	178
Porter's, Leith and Newhaven Ferry,		— — — on The Edinburgh Touchplates:	
(bequeathed)	273	Some New Light on their Origin and	
Baillie of Lamington (and of Hoprig),		Purpose,	224
Arms of,	97	Black, Andrew, elected,	2
Balfour, Otter in Arms of,	110	Blackwood or Weir, Arms of,	98 f.
Balloch, Braes of, Perthshire, Carved		Blower, Fire, Wheel-gear'd, (purchase) .	19
Boulder at,	145	Boar and Otter in Scottish Arms, . . .	110
Band, Silver, from Skailh Hoard, (dona-		Boghead, Kintore, Glass Armlet from, .	382
tion)	131	Bompas, Charles S. M., Death of, . . .	3
Bannatyne (Banathin), George, of Scots		Bone, Objects of:—	
Guards of the French King,	105	from Bac Mhic Connain, Vallay, N. Uist,	
Bardeston Farm, Creetown, Kirkcudbright-		(purchase)	19
shire, Cast of Cup and Ring-marked		from Jarlishof,	357
Stone at,	14	See also Pendants; Pins; Rings;	
Barns of Airlie, Angus, Carved Slab on		Toggle; Whorls.	
Roof of Earth-house at,	146	Bone, Cetacean, Grooved Object of, from	
Barron, Rev. Dr Douglas G., presented a		the Broch of Howe, (donation) . . .	9
Flint-lock Spring Gun,	132	See also Hammer.	
Bartholomew, Sheriff John, Death of, . .	3	Bonnyrigg, Midlothian, Food-vessel Urn	
Bathgate, Thomas D., presented a Toddy		found on Dobbie's Knowe, presented	
Ladle,	12	by Town Council of,	134
Beads, Glass, from Asia Minor, (donation)	134	Bookbinding, Tools for, (purchase) . . .	134
Beaker, Cut-glass, from Birrens,	279	Books, Donations and Purchases of,	
Beaker Urns: see Urns.		15, 22, 70, 72, 129, 135, 179, 233, 274	
Bearsden, Glasgow, Intaglio found on line		Borers or Awls, Bone, from Bac Mhic	
of the Roman Wall at,	10 f.	Connain, Vallay, (purchase)	19
Bedehouse at Tarves,	248 f.	Borness Cave, Kirkcudbright, Glass Armlets	
Beggars' Badges: see Badges.		from,	374, 378, 381
Bell, George E. J., elected,	2	Borthwick, Henry, Death of,	3
Benvie, Perthshire, Sculptured Monument		Boulder, Carved, at Braes of Balloch,	
at,	120	Perthshire,	145
Beoch, Ayrshire, Stone Circle and Burial		Bouvier, Gilles le,	86, 102
Site at,	236	Bowls:—	
— — — — — Relics from, (presented) .	274	Bronze, from the Rhinns of Galloway	
Berie Sands, Valtos, Lewis, Bronze Pin and		(Awhirk),	137
Fragments of Clay Vessels from,		Wooden Turned, from Ardross Castle,	
(donation)	130	Ross-shire,	21
Berry, The Armorial de (Scottish Section),	84	Box of Sheet Iron, (donation)	11
Berwickshire: see Edin's Hall; Spottis-		Boyle, Miss Mary E., elected,	2
woode, Lauder; Whitehill, Earlstoun;		— — — Suggestions for the Dates of Four	
Whittrighill, Mertoun.		Scottish Monuments, by,	115
Bible printed by Christopher Barker, 1583,		Bridge of Don, Aberdeenshire, Jug found	
in Tolquhon Castle Library,	256	with Hoard of Coins near,	178
Bicker, Ale, from Dunblane, (donation) .	274	— — — Hoard of Silver Coins found near,	
Bickerton, Arms of,	103	(acquired)	233
Birley, Eric, on Excavations at Birrens,		Brigantia, Altar to, at Birrens,	279
1936-1937,	275	Broch of Howe, Sanday, Orkney, Relics from,	9
Birrens, Dumfriesshire, Excavations at,		Broch of Midhowe, Rousay, Orkney, Stone	
1936-1937,	275 ff.	Axe found near,	9

399

PAGEPAGE

	PAGE		PAGE
Christie, Mrs Isabella M., presents Relics from Stone Circle near Rig Hill, Nith Lodge,	274	Corbridge, Northumberland, Glass Armlets from, 374 f., 377, 380 ff., 386, 388 ff.	
Cist-covers, Carved:—		— — — Ring Pendant, Glass, from,	378, 382
at Carlowrie, West Lothian,	145	Corrie, John M., presented a piece of Cramp,	8
at Coilsfield, Ayrshire,	145	Cowan, Robert C., Death of,	3
at Craigie Hill, Midlothian,	145	Craig Ruenshin, Birnam, Perthshire, Cup- and Ring-markings on,	143
at Tillicoultry, Clackmannanshire,	145	Craigentiny, Edinburgh, Cinerary Urn containing Incinerated Human Re- mains, Bone Pendant, Calcined Flints, Scrapers, and Unworked Flint; and fragments of a Beaker Urn, found at,	20
Clackmannan: <i>see</i> Tillicoultry.		Craigie Hill, Midlothian, Carved Cist- covers at,	145
Clay, Fragments of Vessels of, from Berie Sands, (donation)	130	Cramp, Piece of, from Papa Stour, Shetland, (donation)	8
Clendenin, Paul D., elected,	178	— — — from Stenness, Orkney, (donation)	9
Clepsydræ: <i>see</i> Water-clocks.		Crawford, William, Arms of,	104
Clocks, Water, or Clepsydræ: <i>see</i> Water- clocks.		of Scots Guards of French King,	105
Clouston, J. Storer, on The Armorial de Berry (Scottish Section),	84	— — — Rev. Thomas, Death of,	3
— — — William,	104 ff.	Cresset, Stone, from Spottiswoode, Lauder, Berwickshire, (donation)	178
Clova Estates, Aberdeenshire, Collection of Prehistoric Relics from, (presented)	69	Crichton, Arms of,	88, 101
Clubs, one with Pecked Handle, from Jarlishof,	355	Crimping Machine from Orkney, (donation)	130
Clydesdale (Clisdal), Guillaume de Moudre- ville dit, Archer, Scots Guards of French King,	105	Crosgrove, Thomas T., elected,	129
Coilsfield, Ayrshire, Carved Cist-covers at,	145	Cross, Sculptured, Anglian type, at Aber- corn Church,	217
Coins:—		Cross-shaft, Fragment of, from Cambus- nethan, (donation)	12
Scottish, Notes on: (1) Rex Scottorum Pennies of David II.; (2) Edin- burgh Light Groats of Robert III.; (3) Some James II. Groats of the Third Variety of the Fleur-de-lis Groats; and (4) Gilbert Kirkwood's Mark on a Gold Coin of James V.,	122	Croy Hill, Dunbartonshire, Relics from the Roman Fort at, (presented)	70
Edward IV. Noble, (donation)	12	Culbin Sands, Glass Armlets from,	367, 370
George VI. Shilling, Scottish type of,	14	Cullerlie Stone Circle, Purchase of Model of,	18
James VI. Half Thistle Merk, (donation)	273	Culloden, Inverness-shire, Perforated Stone Hammer from Westhill,	135
Hoard of Silver, found near Bridge of Don, (acquired)	233	Cultullich, Braes of, Perthshire, Stones and Boulder, Carved, at,	146 f.
Roman, found at Birrens,	339	Cup, Stone, from Sandwick Bay, Unst, Shetland, (donation)	14
— — — Constantius Chlorus, Gold, from Birrens,	279	Cup-like Object, Steatite, from Kirkure, Leasome, Eshaness, Shetland, (pur- chase)	70
Combs:—		Cup-marked Stone, South Friarton, Perth- shire,	147
Bone, found at ancient structure on the Muckle Skerry, Pentland Firth,	12	Cup-marks on Stone, Boulder, and Rock at Braes of Cultullich,	146
Weaving, of Deerhorn, from the Broch of Howe, (donation)	9	— — — and Ring-marked Slab at Tealing,	148
Congreve Match-box, (donation)	132	Cup- and Ring-marks:—	
Constantius Chlorus, Gold Coin of, from Birrens,	279	on Stone at Bardeston Farm, Creetown,	14
Cooking-pots, from Birrens,	289, 313, 322 ff.	on Slab in Roof of Earth-house, Barns of Airlie, Angus,	146
Cooper, The Rt. Hon. T. M., elected,	129	on Craig Ruenshin,	143

	PAGE		PAGE
Cup- and Ring-marks (<i>contd.</i>):—		Dunbar, Sir Patrick, of Biel, Arms of, . . .	99
on Rock, Duncroisk, Glen Lochy, . . .	144	Dunbartonshire: <i>see</i> Croy Hill.	
on Slab at Malling, Lake of Menteith, . .	146	Dun Beag, Struan, Skye, Glass Armlet from, .	367
on Stone outside Circle, at Monzie, . . .	147 f.	Dunblane, Perthshire, Ale Bicker from, .	
on Gladsfield Stone, Newbiggin Farm, .		(donation)	274
Cargill,	146 f.	Duncan, David, Death of,	3
in Earth-house at Pitcur, Angus, . . .	149	Duncroisk, Glen Lochy, Perthshire, Cup- and Ring-markings on Rock at, . . .	144
at Urlar, Perthshire,	145	Dyke, Moray. Anvil-stone from,	8
on Cist-covers in Scotland,	145	Dykes, Thomas, elected,	3
Curle, Dr Alex. O., Excavation on a Viking Settlement at Freswick, Caithness. <i>See</i> Vol. LXXIII.		Earls. Scottish, Coats of Arms of,	96
— Dr James, presents a Roman Altar from Newstead,	14	Earth-house at Gripps, Rousay, Orkney. Collection of Implements and Pottery Fragments from. (presented)	9
Dakers, C. H., Notes on Scottish Coins: David II., Robert III., James II., James V., by,	122	<i>See also</i> Barns of Airlie, Pitcur.	
Dalkeith, Midlothian, Fragment of Bronze Cauldron from,	132	East Lothian: <i>see</i> Archerfield Cave, Dirleton; Ormiston; Traprain Law.	
Dalrulzion, Perthshire, Pottery from Hut- circle at,	14	Ecclefechan, Dumfriesshire, Coin of Maxen- tius found at Dockenflat, near,	340
Damascenus, Copy of works of, from Tolquhon Castle Library,	253	Eday, Orkney:— Excavation of a Neolithic Two-storied Chambered Cairn at Huntersquoy, . .	193
Darroch, Miss, presented a Silver Brooch, .	70	— Axe and Axe-like Implement from, . .	204
David II., Rex Scottorum Pennies of, . .	122	Cairn, Neolithic, near Sandyhill Smithy, Excavation of,	204
Davidson, Dr. James, elected,	3	— Relics from,	208
Deerhorn, Objects of:— from Bac Mhic Connain, Vallay, North Uist, (purchase)	19	Calf of, Neolithic Cairn on, Excavation of, Edin's Hall Broch, Berwickshire, Glass Armlets from,	209 378
from the Old Cattlefold, Vallay, N. Uist, (purchase)	18	Edinburgh:— Light Groats of Robert III.,	124
<i>See also</i> Antler; Combs, Weaving.		George IV., Medal commemorating Visit of, to,	129
— Plate of, with holes and incised lines, from the Broch of Howe, (donation)	9	Touchplates, The,	224
Desch, Dr Cecil H., Report on Axe found at Rahoy Fort, by,	41	Weights and Measures, Stamping of, . .	229 ff.
Dickson, Walter, presented a Panel with the Hammermen's Arms,	11	Dean of Guild, Marks of, on Weights and Measures,	230 f.
— Dr W. K., re-elected to Council, . . .	2	<i>See also</i> Craigentenny.	
Diplomas, Roman Military, to Discharged Soldiers,	280 ff.	Edward IV., Gold Noble of,	12
Discs, Slate, from Jarlshof,	360	Edwards, A. J. H., Report on the Pottery from Cairns on Calf of Eday, by, . .	213
Domitian, Coin of, from Birrens,	340	— — — on A Bronze-gilt Harness Mount- ing from Jarlshof,	363
Donald's Isle, Loch Doon, Ayrshire, Glass Armlet from,	374	— Dr John, Death of,	3
Douglas of Dalkeith and Morton, Boar-head in Arms of,	110	Ellon, Aberdeenshire, Perforated Stone from district of,	129
Doune Castle, Perthshire,	73	Elsack, Yorkshire, Glass Armlet from, . .	374 f., 381
Dowalton Loch, Crannog, Wigtownshire. Glass Armlets from,	378, 380 f., 382	Erasmus, Copy of <i>Apophthegmata</i> of (1533), from Tolquhon Castle Library, . . .	252
Dumfriesshire: <i>see</i> Birrens; Birrenswark; Ecclefechan.		Eyre-Todd, George, Death of,	3
		Faa, Johnny, "Charter Chest" of, misnamed, .	224

	PAGE		PAGE
Fairbairn, James, elected,	69	George IV., Medal commemorating Visit to	
Fibula, Bronze, from Rahoy Vitrified Fort,	40	Edinburgh of,	129
Firearms:—		George VI. Shilling, Scottish type of, . .	14
Flint-lock Spring Gun, (donation) . .	132	Gillies, W., presented a Stone Cup, . . .	14
Heavy Musket or Wall Gun, (donation). .	133	Gillon, C. E., presented an Iron Swey, . .	11
Fitzpatrick, Sidney, elected,	3	Gilruth, Dr J. D., on Early Seals from the	
Flanders Moss, Stirlingshire, Glass Armlet		Abbey of Aberbrothock,	56
from,	377	Gladfield Stone, Newbiggin Farm, Cargill,	
Flint, Flakes, found at Harden Glen,		Perthshire, Cup- and Ring-markings	
Hawick, (donation)	273	on,	146 f.
— in Cairn near Sandyhill Smithy.		Glasgow: see Bearsden; Castlecary.	
Eday, Orkney,	207	Glass Armlets in Britain, by H. E. Kilbride-	
— Nodule, battered, (donation)	9	Jones,	366
— Objects of: see Gravers; Scrapers.		— Vessels of, from Birrens,	292, 334
Flints, Calcined, found in Cinerary Urn at		Glenluce Sands, Glass Armlet from, . . .	378
Craigentinny, Edinburgh, (purchase) . .	21	"Gnatus" on Samian Cup from Birrens, . .	334
Fockart, Patrick, Captain of the Scots		Good, Robert J., elected,	3
Guards, Arms of,	103	Graden of that ilk, Otter in Arms of, . .	110
Fodderty, near Dingwall, Ross-shire, Stone		Graeme, The Very Rev. K. M. Sutherland,	
Axe from,	12	elected,	3
Forbes, Master of,	89	— Patrick Sutherland, elected,	3
— William, of Tolquhon, Hospital		Graffiti on Samian Ware from Birrens, . .	334
founded by,	248 f.	Graham, Arms of,	93
— — — Castle built by,	251	— Angus, elected a Secretary,	2
— — — Library of,	252	— — — presented a Perforated Stone	
— — — Tomb of,	249	from the Ellon district,	129
Forestry Commission (Scotland) present a		— John, presents a Wooden Spade,	273
Cresset,	178	— William de, of Dalkeith, Boar-head in	
Fort, Vitrified, at Rahoy, Morvern, . . .	23	Arms of,	110
Relics from,	38	Grant, Sir Arthur H., presented fragments	
— (presented).	132	of Cinerary Urn,	132
Forts, Vitrified:—		— Walter G., presented Objects from	
The Experimental Production of the		various sites in Orkney, and from	
Phenomena distinctive of,	44	Caithness, etc.,	9 f.
Dating of,	40	— — — presented a Lead Needle from	
Fowlis Wester, Perthshire, Sculptured		Rowiegar, and various relics from	
Stone at,	115	Orkney, also Silver Ornament from	
France, Flint Implements, Palæolithic and		the Skaill Hoard,	130
Neolithic, from,	130	Gratinus, Pottery Stamp of, at Birrens, . .	331
Freswick, Caithness, Excavation on a Viking		Gravers:—	
Settlement at. See Vol. LXXIII.		French,	190
Friarton, South, Perthshire, Cup-marked		Scottish, of Flint and other Stones, . .	180
Stone at,	147	Manufacture of,	181 ff.
Fullarton, Otter in Arms of,	110	Gray, Master of,	89
Fyres, Miss, Books from Tolquhon Castle		Grieve, Miss M. C., presented a Memorial	
Library owned by,	255 f.	Medallion of Charles I., a Memorial	
		Ring of Charles II., a Gold Noble of	
"Gaius," scratched on Samian Cup from		Edward IV.,	12
Birrens,	334	Grimisay, Outer Hebrides, Wooden Vessel	
Galley in Scottish Arms,	93	found in Peat Moss on,	11
Galloway, Rhinns of, a Bronze Bowl from,	137	Gripps, Rousay, Orkney, Collection of	
George III., Wooden Panel with Arms of,		Implements and Pottery Fragments	
from Orkney,	130	from Earth-house at, (presented) . . .	9

INDEX.

403

	PAGE		PAGE
Gun, Flint-lock Spring, (donation)	132	Huntersquoy, Eday, Orkney, Neolithic	
— Wall, Heavy Musket or, probably		Cairn at.	193
from Aberdeenshire, (donation)	133	Axe and Axe-like Implement from,	204
Gunn, Scott, Death of,	4	Hyndford Crannog, Lanarkshire, Glass	
Gunning Fellowship,	7	Armlet from,	384
Hadrian's Wall, Glass Armlets from,	382	Implements, Stone, from Cairn near Sandy-	
Haliburton of Dirleton, Arms of,	95 f.	hill Smithy, Eday, Orkney.	208 f.
Hall, Miss Margaret, presented a Horn		Inscriptions, Roman, at Birrens. 279, 282 f., 339	
Ladle.	12	Intaglio found on line of the Roman Wall	
Halliday, Rev. Alexander, elected,	273	at Bearsden, (donation).	10 f.
Hamilton, Andrew, presents Relics from		Invergowrie, Angus, Sculptured Stone at,	118
Beoch Bronze Age Burial Site,	274	Inverness-shire: <i>see</i> Bac Mhic Connain,	
Hammermen, Heraldic Panel with Arms of		Vallay, North Uist; Carinish, N.	
the,	11	Uist; Dun Beag, Skye; Grimisay;	
Hammers:—		Uist; Vallay, North Uist; Westhill,	
Cetacean Bone, from Bac Mhic Connain,		Culloden,	
Vallay, N. Uist, (purchase)	19	Isles, Lord of the, Arms of,	94, 100
Stone, from Swanston, Midlothian,		Jackson, S. Douglas, Death of,	4
(purchase)	21 f.	James II, Groats of the Third Variety of	
— perforated, from Westhill, Culloden,		the Fleur-de-lis Groats,	126
(purchase)	135	James V., Gilbert Kirkwood's Mark on a	
Handle of Jug, Bronze, from Birrens,	337	Gold Coin of,	128
Harden Glen, Hawick, Roxburghshire,		James VI., Half Thistle Merk of, (presented)	273
Flint Flakes found at,	273	Jar, Roman Storage, from Birrens,	321, 332
Harness Mounting, Bronze-gilt, from		Jarlshof, Shetland, Excavations carried out	
Jarlshof,	363	by H.M. Office of Works in the	
Harpoon or Spear-heads, Bone, from Bac		Bronze Age Levels at, in 1937,	348
Mhic Connain, Vallay, N. Uist,		Jew's Harp, Wooden Case for, (donation)	134
(purchase)	19	Johnston, Arms of,	95
Harriss, Rev. Arthur L., elected,	273	— Frederick, Death of,	4
Hay, James C. MacDonald, elected,	69	— J. Noel, Death of,	4
Hedley, Percy W., Identification of Coins		— John, M.B., Ch.B., elected,	232
from Birrens by,	339	— Sir Reginald F., elected,	3
Henching, Stone for making Balls for,		Jugs:—	
(purchase)	135	found with Hoard of Coins near Bridge	
Henderson, William, on Scottish Late		of Don, acquired through The King's	
Bronze Age Axes and Swords,	150	and Lord Treasurer's Remembrancer, 178	
Heraldry, Animal Forms used in England		from Birrens,	290, 321 f.
and Scotland in,	109	Bronze, Handle of,	337
— Stone with Leith-Forbes Arms at		Kennedy, A. Burgess, Death of,	4
Tolquhon Castle,	267	Kerr, Arms of,	97
Herries of Terreagles, Arms of,	98	Kilbride-Jones, H. E., on Glass Armlets in	
Hindsward Farm, Skares, Ayrshire,		Britain,	366
Wooden Spade from,	273	Kinloss, Robert Reid, Abbot of, Book from	
Horn, Object of: <i>see</i> Ladle.		Library of,	253
Horth, Rev. Walter R., elected,	8	Kirkcudbrightshire: <i>see</i> Bardeston Farm,	
Housesteads, Northumberland, Glass Arm-		Creetown; Borness Cave.	
let from,	374 f.	Kirkure, Northmaxine, Shetland, Cup-like	
— Ring Pendants from,	378	Object of Steatite and Lip Fragment	
Human Remains, Incinerated, found in		of Steatitic Clay from,	70
Urn, Craigentinny, Edinburgh,	20		
Hunter, William C., elected,	8		

	PAGE		PAGE
Kirkwood, Gilbert, Mark of, on Gold Coin of James V..	128	Mackenzie, R. W. R., Death of.	4
Knight, Rev. Dr G. A. Frank, Death of.	4	Mackie, Prof. J. Duncan, elected.	129
Knives:—		Mackintosh, P. T., elected.	69
Iron, with Tang, from Bac Mhic Connain, Vallay, N. Uist, (purchase)	19	MacLagan, D. P., presents a Paper Mould of a Cup- and Ring-marked Stone,	14
Stone (Skaill), from Jarlshof,	355, 356	MacLean, Rev. Andrew C., Death of,	4
Lacaille, A. D., on Scottish Gravers of Flint and other Stones,	180	M'Leod, Alexander G., Excavation of Two Bronze Age Burial Sites in Ayrshire by,	235
——— presented a Bronze Pin and Fragments of Clay Vessels from Beie Sands, also a collection of Flakes and Flint Implements from England and France,	130	MacLeod of Dunvegan, Arms of,	100, 109
Ladle, Horn, used in Allan Ramsay Hotel, Carlpos, (donation)	12	——— of Harris, Arms of,	100
<i>See also</i> Toddy Ladle.		——— of Lewis, Arms of,	100, 109
Lamp, Silver, with nautical designs, (donation)	8	MacRitchie, Rev. Kenneth A., Death of,	4
Lanark, County Council of, presented Fragment of Cross-shaft from Cambusnethan,	12	Maitland of Lethington, Arms of,	95
Lanarkshire: <i>see</i> Cambusnethan; Hyndford.		Malcolm, T. I., presented a Sugar Cutter and a Tea-leaf Cutter,	8
Lantern, Bowat Candle, from Orkney, (donation)	130	Malling, Lake of Menteith, Cup- and Ring-marked Slab at,	146
Lead, Objects of: <i>see</i> Needle.		Manchester, Glass Armlet from Roman Fort at,	374
Leese, John, elected,	3	Mann, Ludovic M'Lellan, presents an Intaglio,	10
Leslie, Arms of,	98	Map of Prince Charles Edward's Itinerary, (donation)	132
Library of William Forbes of Tolquhon,	252 ff.	Marshall, Miss Dorothy N., awarded Chalmers-Jervise Prize,	7
Lithgow of Drygrange, Otter in Arms of,	110	Mary, H.M. Queen, presented a Medal commemorating Visit of George IV, to Edinburgh,	129
Livingstone, Arms of,	88, 101	“Master of,” used as title,	88 ff.
——— of Callander, Arms of,	99	Match-box, Congreve, (donation)	132
Lothian, Marquess of, presented a Cinerary Urn found near Monteviot,	132	Maxentius, Coin of, from Dockenflat, near Ecclefechan,	340
Lumsden, Captain Hugh P., presented a collection of Prehistoric Relics from Clova Estates,	69	Maxton, Roxburghshire, Glass Armlet from,	367, 372
<i>Lusitania</i> , S.S., Medal to celebrate the sinking of, (donation)	10	Maxwell, Sir Herbert E., Death of,	4
Lyon, Arms of,	88	Obituary Notice of,	5
MacAndrew, Miss E., elected,	69	Medallion, Memorial, of Charles I., (donation)	12
Macaskill, John, presents a Wooden Vessel,	11	Medals:—	
M'Bain, James M., elected,	232	George IV., commemorating Visit to Edinburgh, (donation)	129
Macdonald, Lord of the Isles, Arms of,	94, 100	Iron, to celebrate the sinking of S.S. <i>Lusitania</i> , (donation)	10
——— Archibald, presents Wooden Beam Scales,	178	Medet, Potter,	311 f.
——— Miss J. C. C., Death of,	4	Meldrum, Alexander, of Seggie, Arms of,	110
McDougall, W. Laidlaw, Death of,	4	Mercury, Altars to, at Birrens,	279
Macintosh, William, elected,	8	Merse or March Land,	110 f.n.
Macintyre, William, Death of,	4	Midhowe, Broch of, Rousay, Orkney, Stone Axe found near,	9
Mackenzie, Rev. John H., elected,	232	Midlothian: <i>see</i> Bonnyrigg; Carlpos; Craigie Hill; Dalkeith; Swanston.	
		Milking Gap, High Shield, Northumberland, Glass Armlets from,	381, 389

INDEX.

405

	PAGE		PAGE
Millar, Charles M. Hepburn, elected.	3	Nodule, Flint, battered, (donation)	9
Mirror, Pocket, which belonged to Lord Ogilvy (1725-1803), (donation)	273	Normanville of Scots Guards,	103
Mitford, T. Bruce, elected.	178	Northern Lights, H.M. Commissioners of, presented a Stone Object,	12
Model of Stone Circle, Cullerlie, Echt, (purchased)	18	"Offerand Stok." Ancient Portable Money-Box or,	68
Money-Box or "Offerand Stok," Ancient Portable,	68	Ogilvy, David, Lord, Pocket Mirror of, (donation)	273
Monypenny, Sir William, Arms of,	99	Orkney, Earl of, Arms of,	93
Monquhitter, Aberdeen, Glass Armlet from, 367, 370, 372	372	Orkney:—	
Monteviot, Roxburghshire, Cinerary Urn found in 1871 at,	132	Grooved Stone from, (donation)	130
Monuments, Suggestions for the Dates of Four Scottish,	115	Snuff Quern from, (donation)	130
--- --- Considerations against,	121	<i>See</i> Broch of Howe; Broch of Midhowe, Rousay; Eday; Grippe, Rousay; Huntersquoy, Eday; Midhowe, Rousay; Rinyo, Rousay; Ronaldshay; Rowiegar, Rousay; Skaill; Stenness; Taiverso Tuick, Rousay; Trumland, Rousay; Wyre, Island of.	
Monymusk, Aberdeenshire, Fragments of Cinerary Urn from,	132	Ormiston, East Lothian, Wooden Shovel from old Coal Workings at,	273
Monzie, Perthshire, Cup- and Ring-marked Stone outside Circle at,	147 f.	--- Coal Company, Directors of, present a Wooden Shovel,	273
Morayshire: <i>see</i> Culbin Sands; Dyke.		Ormond, Earldom of,	88
Morham, Miss, presented Map of Prince Charles Edward's Itinerary,	132	Orr, M. V., Examination of Carbonised Wood at Rahoy, by,	41
Mortarium from Birrens,	290	Otter and Boar in Scottish Arms,	110
--- Stamps, Note on,	331		
Mossius, Pottery Stamp of, from Birrens,	330	Panel, Heraldic, (donation)	11
Motherwell, William of, Arms of,	103 f.	Wooden, with Arms of George III., from Orkney, (donation)	130
Mounting: <i>see</i> Harness Mounting.		Papa Stour, Shetland, Piece of Cramp from,	8
Mow, Roxburghshire, Ancient Parish,	97	Parsons, John W., Death of,	4
Mowat, Arms of,	98	Pendants:—	
Muckle Skerry, Pentland Firth, Ancient Structure and Objects found on,	12	Bone, found in Cinerary Urn at Craigen-tinny, Edinburgh, (purchase),	20
Muir, Mrs Gray, Death of,	4	Ring, of Glass,	378, 388
--- (Maquen), Alexander, Arms of, 104, 106 f.	104, 106 f.	Pentland Firth, Ancient Structure and Objects found on the Muckle Skerry,	12
Munro, Rev. Dr Donald, Death of,	89	Perthshire: <i>see</i> Balloch, Braes of; Benvie; Birrens; Craig Ruenshin, Birnam; Cultullich, Braes of; Dalhulzion; Doune Castle; Dunblane; Duncroisk, Glen Lochy; Fowls Wester; Friarton, South; Gladfield Stone, Cargill; Mallang, Lake of Menteith; Monzie; Ullar.	
Musket, or Wall Gun, probably from Aberdeenshire, (donation)	133	Pewterers:—	
Muster Rolls of Scots Guards of French King,	105	"Common Box" of Edinburgh,	224
Needle, Lead, found beside Rowiegar Cairn, Rousay, Orkney, (donation)	130	Edinburgh, Touchplates of,	224
Newstead, Roxburghshire, Glass Armlets from,	373 ff., 386, 388, 390	Pin-head made from a Horse's Tooth from the Broch of Howe, (donation)	9
--- Roman Fort, Roman Altar from,	14		
Newton, Mrs, presented Relics from Rahoy Vitrified Fort,	132		
Nith Lodge, Ayrshire, Cremation Burials in Stone Circle at,	243 ff.		
Noble, William, elected,	69		
Noble, Gold, of Edward IV., (donation)	12		

	PAGE		PAGE
Pins:—		Razor with Tortoiseshell Handle from	
Bone, from the Old Cattlefold, Vallay,		Orkney, (donation)	130
N. Uist. (purchase)	19	Reekie, Alexander, Death of.	4
Bronze, from Berie Sands, Valtos,		Rennie, John, Death of.	4
Lewis, (donation)	130	Rhind Lectureship,	7
Silver, from Skaill Hoard, (donation) .	131	Rhinn of Galloway. A Bronze Bowl from	
Pitcur, Angus. Cup- and Ring-markings in		the,	137
Earth-house at.	149	Richardson, James S., presents Brass	
Plaque, Bone, engraved, from Jarlshof. .	360	Candlesticks, Fish Spear-head, and	
Platters from Birrens.	296, 322 ff., 334	Sheet Iron Box.	11
Plean Colliery, Stirlingshire, Specimens of		— Criticism of Suggested Dates of	
Vitrification produced at, (presented)	132	Four Scottish Monuments by,	121
Polisher, Stone, faceted, from Jarlshof. .	357	— presents a Fish Spear.	132
Pollock, Arms of.	98	— presents an Ale Bicker.	274
Polwarth, The Master of, presents Flint		Richmond, Ian A., on Excavations at	
Flakes from Harden Glen,	273	Birrens.	302
Post-holes at Birrens, absence of, explained.	301	Rig Hill, Ayrshire, Stone Circle on. . .	246
Potters' Stamps at Birrens,	329 ff.	Relics from, (presented)	274
— on Mortaria, Note on,	331	Ring-marked Stone from Cist in Beoch	
Pottery:—		Stone Circle,	238
from Hut-circle, Dalruizion, (donation)	14	— do., (donation)	274
from Jarlshof,	358 f.	Rings:—	
Fragments of Vessel from the Broch of		or Toggle, Bone, from the Broch of	
Howe, (donation)	9	Howe, (donation)	9
of broch type found at Ancient Structure		Gold Memorial, of Charles II., (donation)	12
on the Muckle Skerry, Pentland		Silver Finger, from the Broch of Howe,	
Firth,	12	(donation)	9
Neolithic, from Cairns on Calf of Eday.		— Neck, from the Skaill Hoard,	
Report on,	213	(donation)	130
Fragments in Neolithic Cairn near		Slate, from Jarlshof,	360
Sandyhill Smithy, Eday, Orkney. . . .	208	Rinyo, Rousay, Orkney, Stone Object from,	10
Roman, Rim of Beaker from Birrens, . .	290 f.n., 297	Rires, Monsieur de,	89
Steatitic, Rim Fragment from Kirkure,		Robert III., Edinburgh Light Groats of. .	124
Shetland, (purchase)	70	Robertson, David, elected.	8
Objects of: <i>see</i> Whorls.		— Dr F. W., elected,	3
Poulter, George C. B., elected,	3	— Dr William S. I., elected,	3
Pronged Bone Implements from Jarlshof. .	358	Rock:—	
Querns:—		Carvings at Duncroisk, Glen Lochy,	
found in Rahoy Fort.	30, 39	Perthshire,	144
Snuff, from Orkney, (donation)	130	— Cup- and Ring-marks at Urrlar,	
<i>See also</i> Rubbers, Grain.		Aberfeldy,	145
Quili, Monsieur de,	89 f.	Cup-marked, at Braes of Cultullich, . .	146
Rahoy, Morvern, Argyll, Vitrified Fort at,	23	Ronaldshay, North, Orkney, Kelp Slag from,	9
Relics from,	38	Rose, Sir H. Arthur, Death of,	4
— do., (presented)	132	Ross or Rose (Ros or Rooz), James, in	
Report on Axe from,	41	Muster Rolls of Scots Guards,	106
Examination of Carbonised Wood at. . .	41	Ross-shire: <i>see</i> Ardross Castle; Berie	
Ramsay, J. Wardlaw, presents an Urn, . .	273	Sands, Valtos, Lewis; Fodderty.	
Ranto, Potter,	311 f.	Rowiegar, Rousay, Orkney, Relics from the	
		Long Stalled Cairn and intrusive	
		Buildings at, (presented)	9
		— Lead Needle found beside	
		the Cairn at,	130

INDEX.

407

	PAGE		PAGE
Roxburghshire: <i>see</i> Chesterhall, Bowden; Harden Glen, Hawick; Maxton; Monteviot; Mow; Newstead; Sandyknowe.		Silver:—	
Rubbers, Grain, from Jarlshof.	355, 357	Ornaments from Skaill Hoard, (donation)	130
Russell, Raymond, elected.	178	Objects of: <i>see</i> Brooch; Lamp; Ring; Finger.	
Ruthven, Master of.	89	Simpson, Alexander, Death of.	4
St Michael, Arms of,	96	— Dr W. Douglas, on Doune Castle.	73
St Vigeans, Lord, elected a Vice-President, — Angus, Cross-slab at.	1	— — — on Tolquhon Castle and its Builder.	248
Samian Ware, from Birrens, with Graffiti and Potters' Stamps.	334	Skaill, Orkney, Silver Ornaments from the Hoard found at.	130
— — — Decorated, from Birrens.	309	Slag. Kelp, from North Ronaldshay, (donation)	9
— — Bowl, from Birrens.	286	Smith, W. S. Kennedy, elected.	129
— — Platter, from Birrens.	301	Snuff Quern from Orkney, (donation)	130
Sandwick Bay, Unst, Shetland, Stone Cup from.	14	South Shields, Glass Armlets from,	386
Sandyknowe, Roxburghshire, Glass Armlet from,	389	Spade, Wooden, from an old Mineral Working, Hindsward Farm, Skares, Old Cunnock, (donation)	273
Sarvus, Pottery Stamp of, Birrens,	330	Spear, Fish, of Iron, (donation)	132
Scales, Wooden Beam, from North Uist, (donation)	178	— or Harpoon Heads, Bone, from Bac Mhic Connain, Vallay, (purchase)	19
Scots Guards of the French King:—		Spear-head, Fish, (donation)	11
Members of,	105	— Bronze, from Asia Minor, (donation)	134
Muster Rolls of,	105 f.	Spottiswoode, Lauder, Berwickshire, Cres- set from,	178
Scott, Miss Judith D. Guillum, elected.	129	Steatite, Objects of:—	
— — of Balwearie, Arms of,	100	Cup-like Object and Lip Fragment from Kirkure, Shetland, (purchased)	70
Scrapers:—		Vessels from Jarlshof,	358
Flint, from Cinerary Urn found at Craigentinny, Edinburgh, (purchase)	21	Stenness, Orkney, Cramp found near a Burial Mound at,	9
— from Rahoy Fort,	38	Stevenson, Emeritus Professor William B., elected,	3
Quartz, from Jarlshof,	356 f.	Stewart, Mrs, elected,	8
Seal, Tooth of, from the Broch of Howe, (donation)	9	— — of Darnley, Arms of,	98
Seals, Two Early Thirteenth Century, from Arbroath Abbey,	56	Stirling, Flint-lock Gun for use against Poachers, from,	132
"Searles," stamped on Flint Lock of Spring Gun,	132	Stirlingshire: <i>see</i> Camelon; Flanders Moss; Plean.	
Selkirkshire: <i>see</i> Caddonlea Camp; Tor- woodlee.		Stone, Objects of: <i>see</i> Adze; Arrow-head; Axe-hammer; Axes; Chisel (Slate); Hammers; Knives; Scrapers; Whorl.	
Sempill, John, Arms of,	104	with cavity from an Ancient Structure on the Muckle Skerry, Pentland Firth, (donation)	12
— — — of Scots Guards of French King,	105	Stone Circle at Beoch, Ayrshire,	235
Simple, Walter, elected.	3	Ring-marked Stone from Cist,	238
Shetland: <i>see</i> Jarlshof; Kirkure, North- mavine; Papa Stour; Sandwick Bay, Unst; Tingwall; Unst.		Burnt Bones from,	237, 239 f.
Shovels:—		— Cullerlie, Echt, Model of, (pur- chase)	18
Bone, from Jarlshof,	358	— — on Rig Hill, Nith Lodge, Ayr- shire,	241
Wooden, from old Coal Workings at Ormiston, (donation)	273		
Silver, Dr A. S., elected,	3		

	PAGE		PAGE
Stone Circle on Rig Hill, Nith Lodge, Ayrshire. Relics from, (presented)	274	Toggle or Ring, Bone, from the Broch of Howe, Orkney, (donation)	9
Stones, Grooved, from Orkney, (donation)	130	Tokens, Communion:—	
Perforated, from the Ellon district, Aberdeenshire, (donation)	129	bequeathed by Rev. Dr Burns,	273
Sculptured or Incised, at Fowls Wester,	115	of Tingwall, (donation)	10
— at Inveigowrie,	118	Tolquhon Castle and its Builder,	248
— — See also Altars; Cross-shaft.		— — — Heraldic Stone at,	267
Stuart, Mrs Mary B., Bequest of Lamp by,	8	— — — Monument at Tarves,	249 f.
Stud, Harness, Bronze, from Birrens,	337	Tombstone at Benvie,	120
Sugar Cutter, (donation),	8	Torwoodlee Broch, Glass Armlet from,	388
Sutherland, Francis G., elected,	129	Touchplates, The Edinburgh,	224
— — Harald H., elected,	3	Trajan, Coins of, from Birrens,	339
Swanston, Midlothian, Stone Hammer from,	21	Traprain Law, Glass Armlets from, 367, 369 ff.	
Swey, Iron, (donation)	11	— — — Ring Pendants, Glass, from,	378
Swinton, Captain George S. C., Death of,	4	Trumland, Rousay, Orkney, Barbed Arrow-head of Quartz from Farm of,	9
— Coat of Arms of,	96 f.	Tungrians serving at Birrens, and Raetia, 280, 282	
Swords:—		Tyzack, Francis J., elected,	3
Axes and, Scottish Late Bronze Age,	150		
Leaf-shaped,	158	Uist, North, Inverness-shire, Wooden Beam Scales from,	178
Taiverso Tuick, Rousay, Orkney, Cairn at,	197	Unst, Shetland, Stone Cup from Sandwick Bay,	14
Taylor, Alastair N., Death of,	4	Urlar, Perthshire, Cup- and Ring-marks at,	145
Taylor, Charles, on an Ancient Portable Money-Box or "Offerand Stok,"	68	Urns:—	
Tea-leaf Cutter, (donation)	8	Beaker, from Beoch Stone Circle,	241, 247
Tealing, Angus, Cup-marked Stone at Earth-house,	148	— from Craigentenny, Edinburgh, (purchase)	21
Terret Rings, Bronze, from Birrens,	337	Cinerary, Fragments of, found in Beoch Cairn, Ayrshire,	237 f.
Thomson, Edward J., Death of,	4	— do., (donation)	274
Thorgilson or Clouston, William,	104 f.	with Incinerated Human Remains, Bone Pendant, Calcined Flints, Scrapers, and an Unworked Fragment, from Craigentenny, Edinburgh, (purchase)	21
Thorneycroft, Wallace, presents specimens of Vitrification produced at Rahoy Fort and Plean Colliery,	132	— — found near Monteviot, (donation),	132
presents Fragments of Pottery from Hut-circle, Dalrulzion,	14	— — from Monymusk, Fragments of, (donation)	132
— and Professor Childe on the Vitrified Fort at Rahoy, Morvern,	23	— — from Stone Circle, Nith Lodge,	245
— — — — — on the Experimental Production of the Phenomena distinctive of Vitrified Forts,	44	— — do., (presented)	274
Throp, near Gilsland, Cumberland, Glass Armlet from,	389	— found near Tillicoultry, (donation)	273
Tillicoultry, Clackmannan, Carved, Chest-covers at,	145	Incense-cup, from Stone Circle, Nith Lodge,	243 f.
Cinerary Urn found near,	273	— do., (donation)	274
Tingwall, Shetland, Communion Token of, (presented)	10	Neolithic, Fragment of, from Cairn on Calf of Eday,	216
Toddy Ladle, Wooden, from Cuthness, (donation)	12	Vallay, North Uist, Inverness-shire, Objects from the Old Cattlefold, (purchase)	18
		Verulamum, Glass Armlet from,	374 f.
		Verus, Julius, probably at Birrens,	301

INDEX.

409

	PAGE		PAGE
Vessels:—		Whitehill, Earlston, Berwickshire, Glass	
Glass, from Birrens.	292	Armlet from.	371
Pottery, Fragments of, from the Broch		Whitelaw, Charles E., presented a Musket. .	133
of Howe, (donation)	9	Whittrighill, Mertoun, Berwickshire, Chisel-	
Steatite, from Jarlshof.	358	ended Tool from.	188
Wooden, from Grimsay, (donation) . .	11	Whorls:—	
Victorinus, Coin of, from Birrens. . . .	340	Bone, from the Broch of Howe,	
"Vitalis" on Samian Platter from Birrens.	334	(donation)	9
Vitrification, Experimental Production of.	44	Pottery, from the Old Cattlefold, Vallay.	
— Specimens presented.	132	N. Uist, (purchase)	19
Vitrified Fort: <i>see</i> Fort.		Stone, from the Broch of Howe,	
		(donation)	9
		Wightman, A. Stuart, elected.	3
Walker, Dr William J. S., elected.	129	Wigtownshire: <i>see</i> Awhirk; Dowalton	
Wallace, T. A., presented Fragment of a		Loch; Glenluce Sands.	
Bronze Cauldron from Dalkeith, . . .	132	Williamson, Robert F., Death of,	4
War-cries, Highland.	109 f.n.	Winders, Hand Yarn and Bobbin, (dona-	
Ward, Guy Arthur, elected.	3	tion)	132
Ward or Wart Hill,	109 f.n.	Wolson, Florence, Book from Library of. .	252 f.
Water-clocks, Clepsydræ or:—		Wood, Objects of: <i>see</i> Bowl; Toddy	
from Awhirk, Wigtownshire.	139	Ladle.	
Development of,	139	Works, H.M. Commissioners of, present	
Weaving, Glass Objects used in, from		Glass Objects used in Weaving, . . .	11
Arbroath, (donation)	11	Wright, Rev. Ronald S., elected.	232
Weights and Measures, Stamping of, . .	229 ff.	Wyre, Island of, Orkney, Axe-like Stone	
Weir or Blackwood, Arms of,	98 f.	Object from,	10
Wemyss of Wemyss, Family of,	8		
Westhill, Culloden: <i>see</i> Culloden.		Young, Alison, on Cup- and Ring-markings	
West Lothian: <i>see</i> Abercorn; Carlowrie.		on Craig Ruenshin, with some	
Westwater, Alexander, elected.	3	Comparative Notes.	143



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